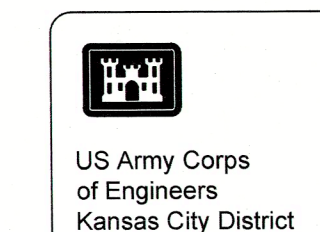


US Army Corps
of Engineers
Kansas City District

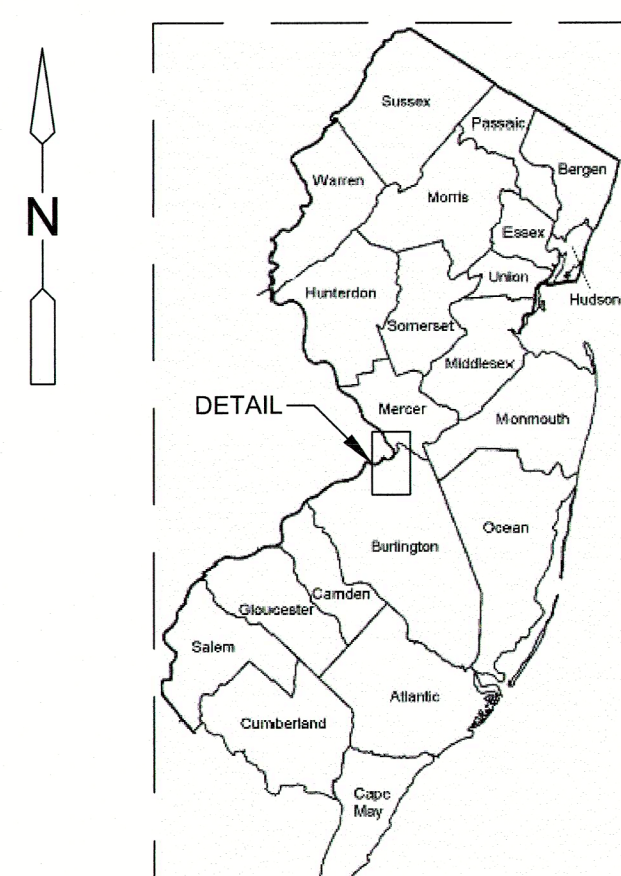


ROEBLING STEEL SUPERFUND SITE, OPERABLE UNIT 5 SOIL COVER REMEDIAL DESIGN FLORENCE TOWNSHIP, NEW JERSEY

SEPTEMBER 2019

PREPARED BY:

CDM FEDERAL PROGRAMS CORPORATION



LOCATION MAP
NTS



VICINITY MAP
NTS

DRAWING INDEX

- G-1 COVER SHEET AND DRAWING INDEX
- G-2 GENERAL NOTES AND LEGEND
- G-3 OVERALL SITE PLAN
- C-1 EXISTING CONDITIONS SURVEY PLAN I
- C-2 EXISTING CONDITIONS SURVEY PLAN II
- C-3 EXISTING CONDITIONS SURVEY PLAN III
- C-4 EXISTING CONDITIONS SURVEY PLAN IV
- C-5 SITE PREPARATION & SOIL EROSION & SEDIMENT CONTROL PLAN
- C-6 SUBGRADE PLAN I
- C-7 SUBGRADE PLAN II
- C-8 SUBGRADE PLAN III
- C-9 SUBGRADE PLAN IV
- C-10 RESTORATION PLAN I
- C-11 RESTORATION PLAN II
- C-12 RESTORATION PLAN III
- C-13 RESTORATION PLAN IV
- C-14 SOIL COVER SYSTEM SECTIONS
- C-15 CIVIL/SITE DETAILS I
- C-16 CIVIL/SITE SECTIONS
- C-17 STORMWATER DETAILS

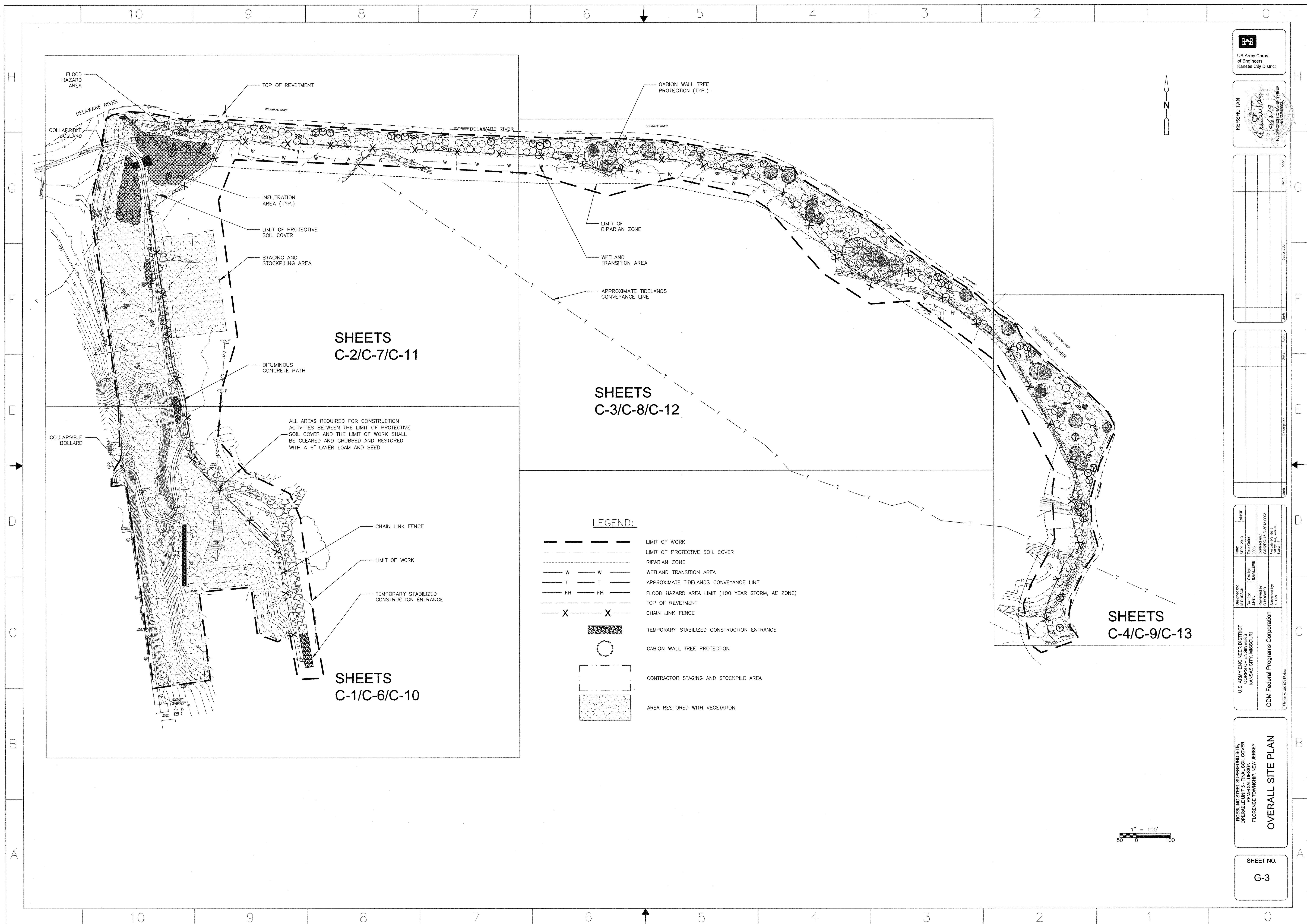
Date	Task Order	Task Order	Task Order
09/13/19	0003	0003	0003
Designed by	Drawn by	Checked by	Reviewed by
J. HILL	J. HILL	J. HILL	J. HILL
Designed by	Drawn by	Checked by	Reviewed by
K. TAN	K. TAN	K. TAN	K. TAN

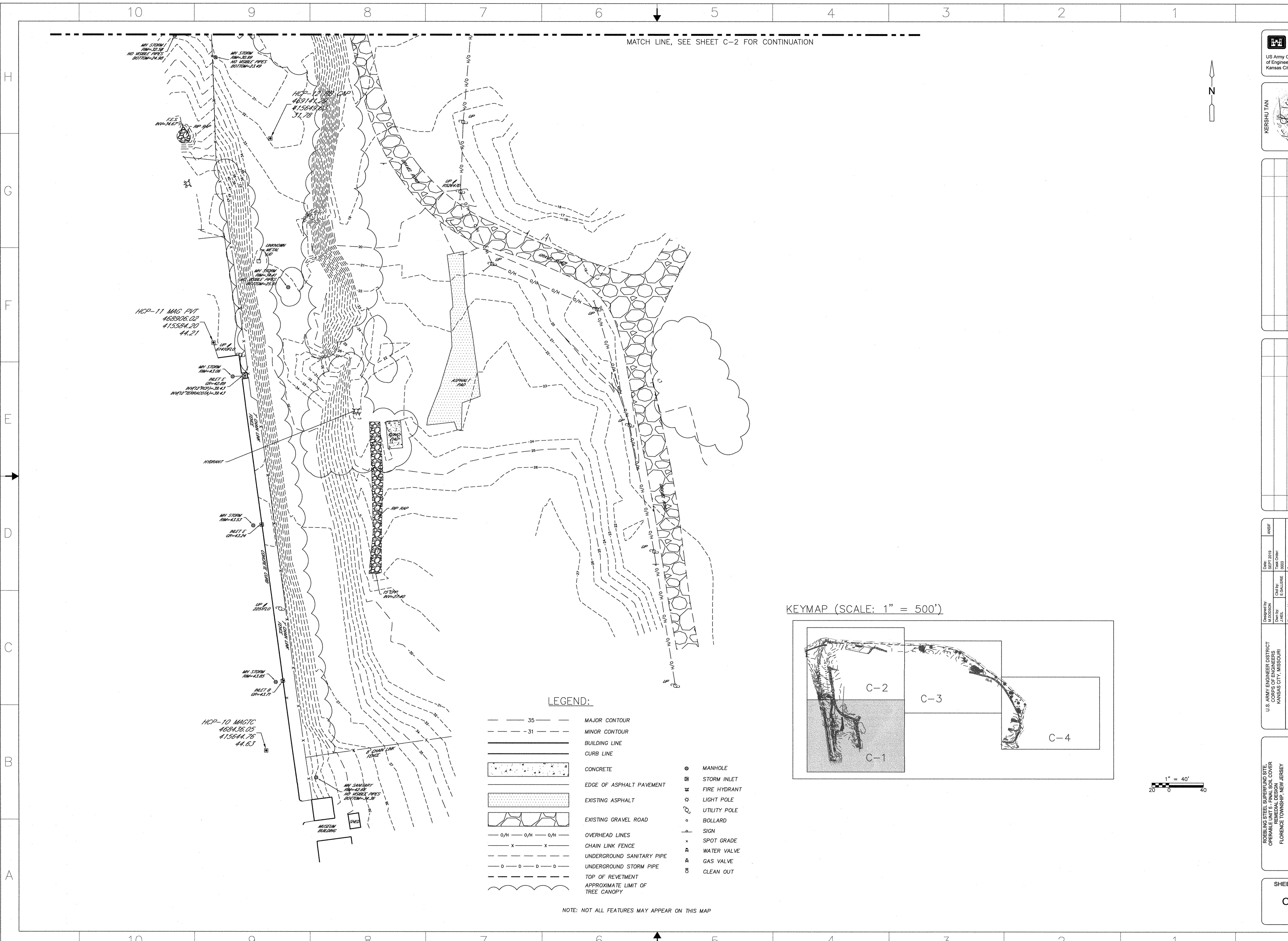
ROEBLING STEEL SUPERFUND SITE,
OPERABLE UNIT 5 - FINAL SOIL COVER
FLORENCE TOWNSHIP, NEW JERSEY
COVER SHEET
AND DRAWING INDEX

SHEET NO.
G-1

CONTRACT NO. W912DQ-15-D-3013-0003

[illegible]





US Army Corps of Engineers
Kansas City District

KERSHU TAN
9/13/19
NS PROFESSIONAL ENGINEER
NO. 024392

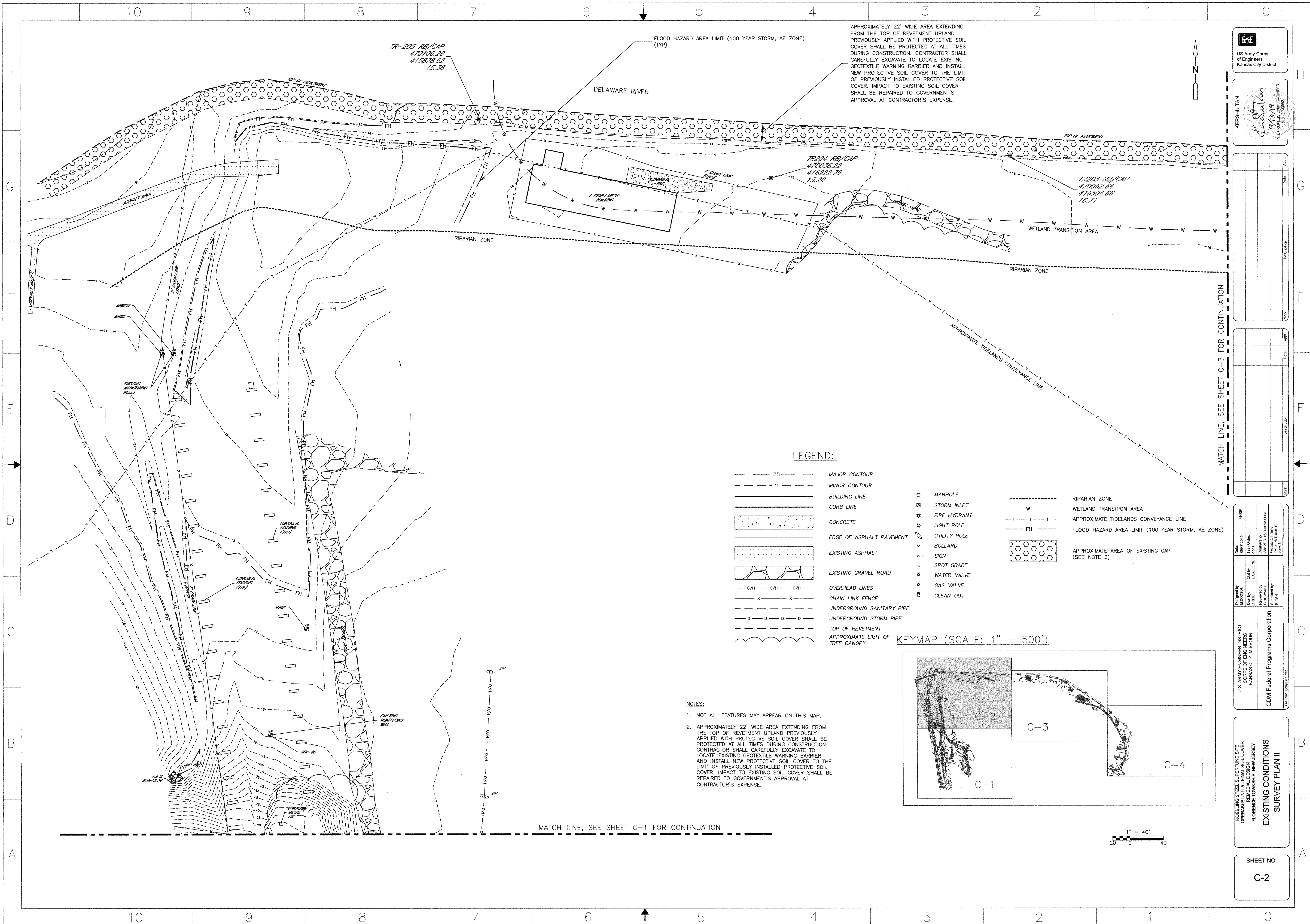
Mark	Description	Date	Appr.

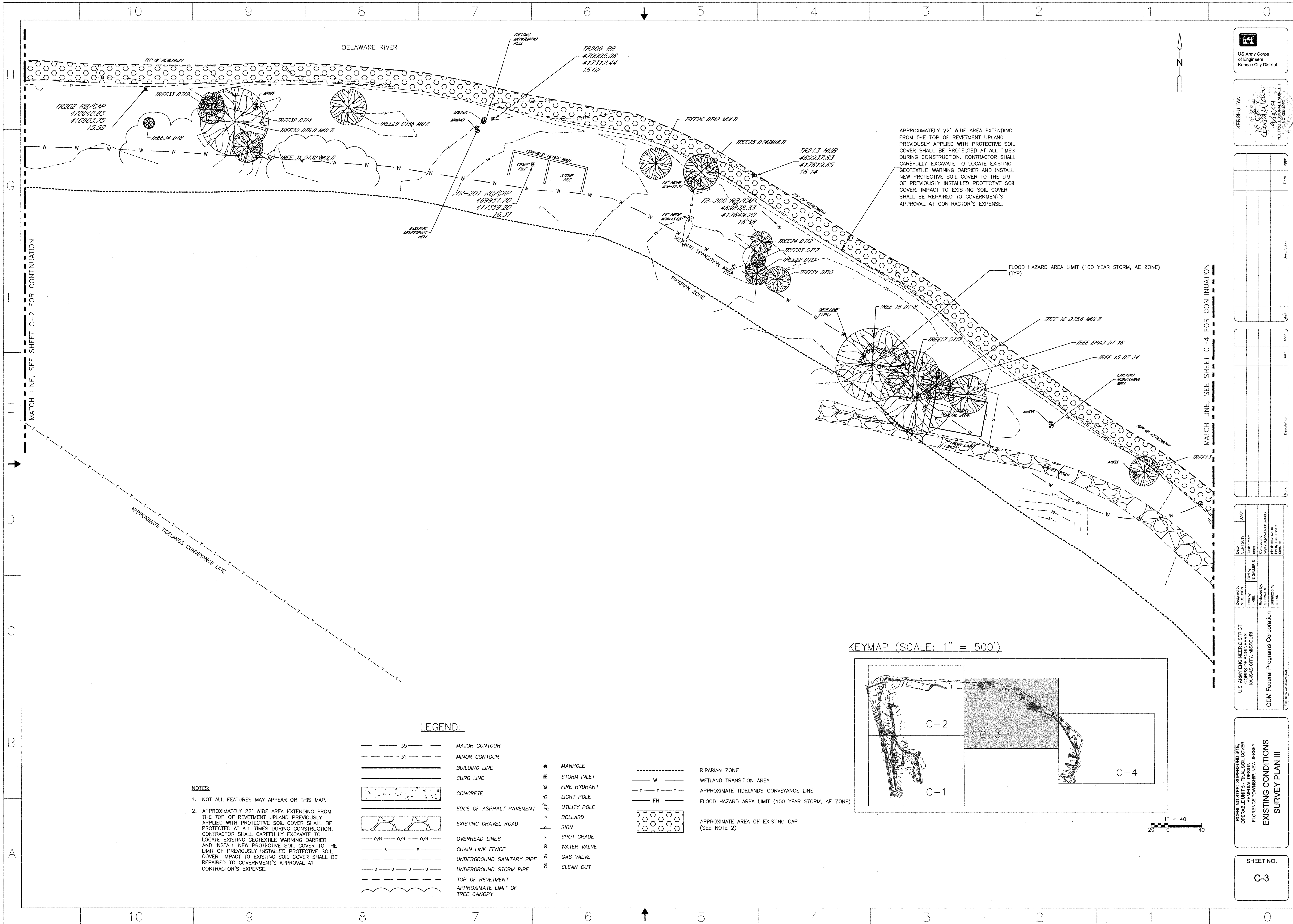
Mark	Description	Date	Appr.

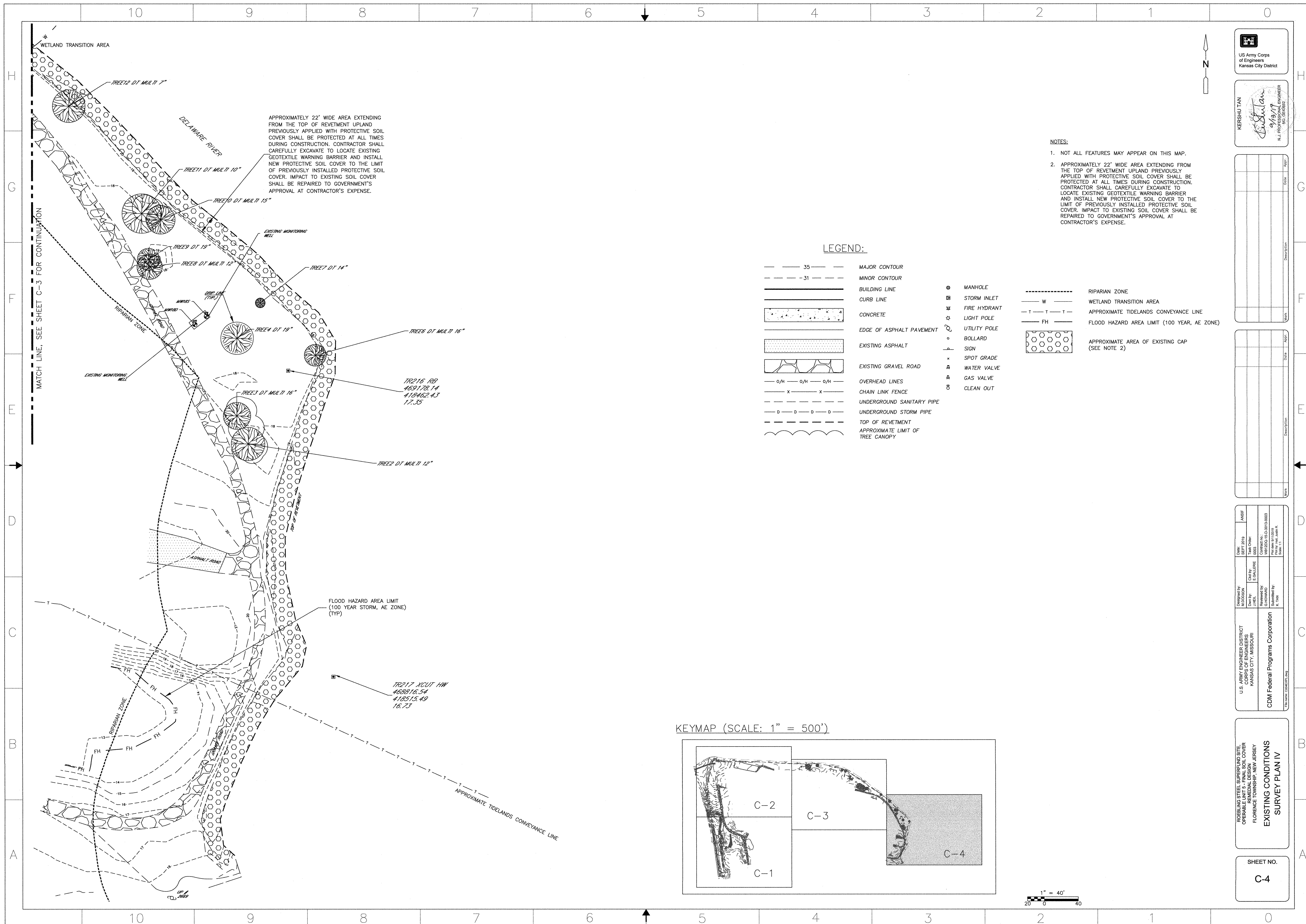
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI	Designed by M. DODSON	Drawn by J. HILL	Check by E. GALLERIE	Date SEPT 2019	ANSF
	Reviewed by K. TAN	Checked by K. TAN	Scale AS SHOWN	Contract No. CDM-FP-19-0003	Project No. 19-0003 R
CDM Federal Programs Corporation					

EXISTING STEEL SUPERSTRUCTURE
OPERABLE UNIT FINAL SOIL COVER
FLORENCE TOWNSHIP, NEW JERSEY
REMEDIAL DESIGN
EXISTING CONDITIONS
SURVEY PLAN I

SHEET NO.
C-1





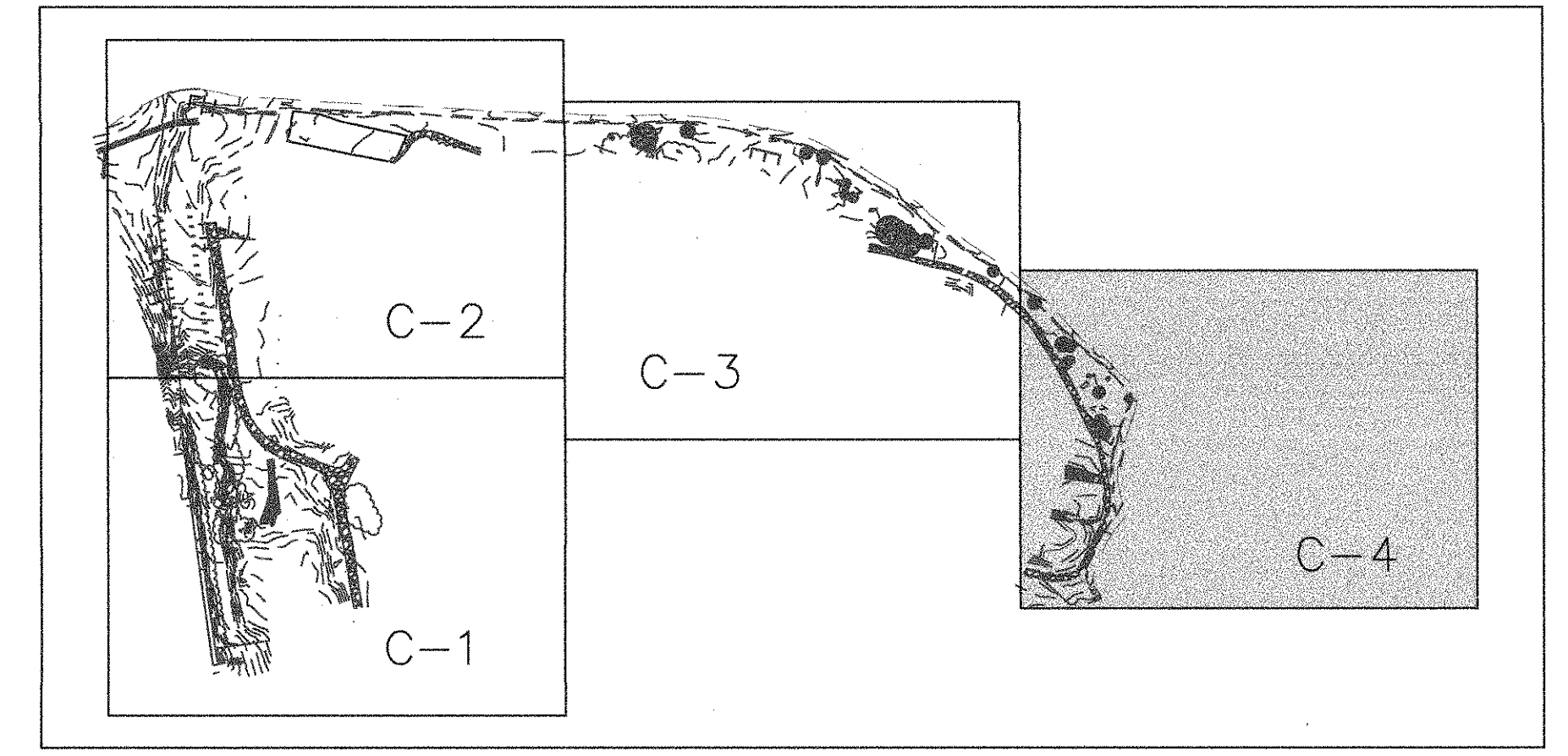


- NOTES:
1. NOT ALL FEATURES MAY APPEAR ON THIS MAP.
 2. APPROXIMATELY 22' WIDE AREA EXTENDING FROM THE TOP OF REVEMENT UPLAND PREVIOUSLY APPLIED WITH PROTECTIVE SOIL COVER SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL CAREFULLY EXCAVATE TO LOCATE EXISTING GEOTEXTILE WARNING BARRIER AND INSTALL NEW PROTECTIVE SOIL COVER TO THE LIMIT OF PREVIOUSLY INSTALLED PROTECTIVE SOIL COVER. IMPACT TO EXISTING SOIL COVER SHALL BE REPAIRED TO GOVERNMENT'S APPROVAL AT CONTRACTOR'S EXPENSE.

LEGEND:

- | | | | | |
|----------------------------------|---------------|--------------|-------|---|
| 35 | MAJOR CONTOUR | MANHOLE | W | RIPARIAN ZONE |
| 31 | MINOR CONTOUR | STORM INLET | T | WETLAND TRANSITION AREA |
| BUILDING LINE | | FIRE HYDRANT | T-T-T | APPROXIMATE TIDELANDS CONVEYANCE LINE |
| CURB LINE | | LIGHT POLE | FH | FLOOD HAZARD AREA LIMIT (100 YEAR, AE ZONE) |
| CONCRETE | | UTILITY POLE | | |
| EDGE OF ASPHALT PAVEMENT | | BOLLARD | | APPROXIMATE AREA OF EXISTING CAP (SEE NOTE 2) |
| EXISTING ASPHALT | | SIGN | | |
| EXISTING GRAVEL ROAD | | SPOT GRADE | | |
| OVERHEAD LINES | | WATER VALVE | | |
| CHAIN LINK FENCE | | GAS VALVE | | |
| UNDERGROUND SANITARY PIPE | | CLEAN OUT | | |
| UNDERGROUND STORM PIPE | | | | |
| TOP OF REVEMENT | | | | |
| APPROXIMATE LIMIT OF TREE CANOPY | | | | |

KEYMAP (SCALE: 1" = 500')



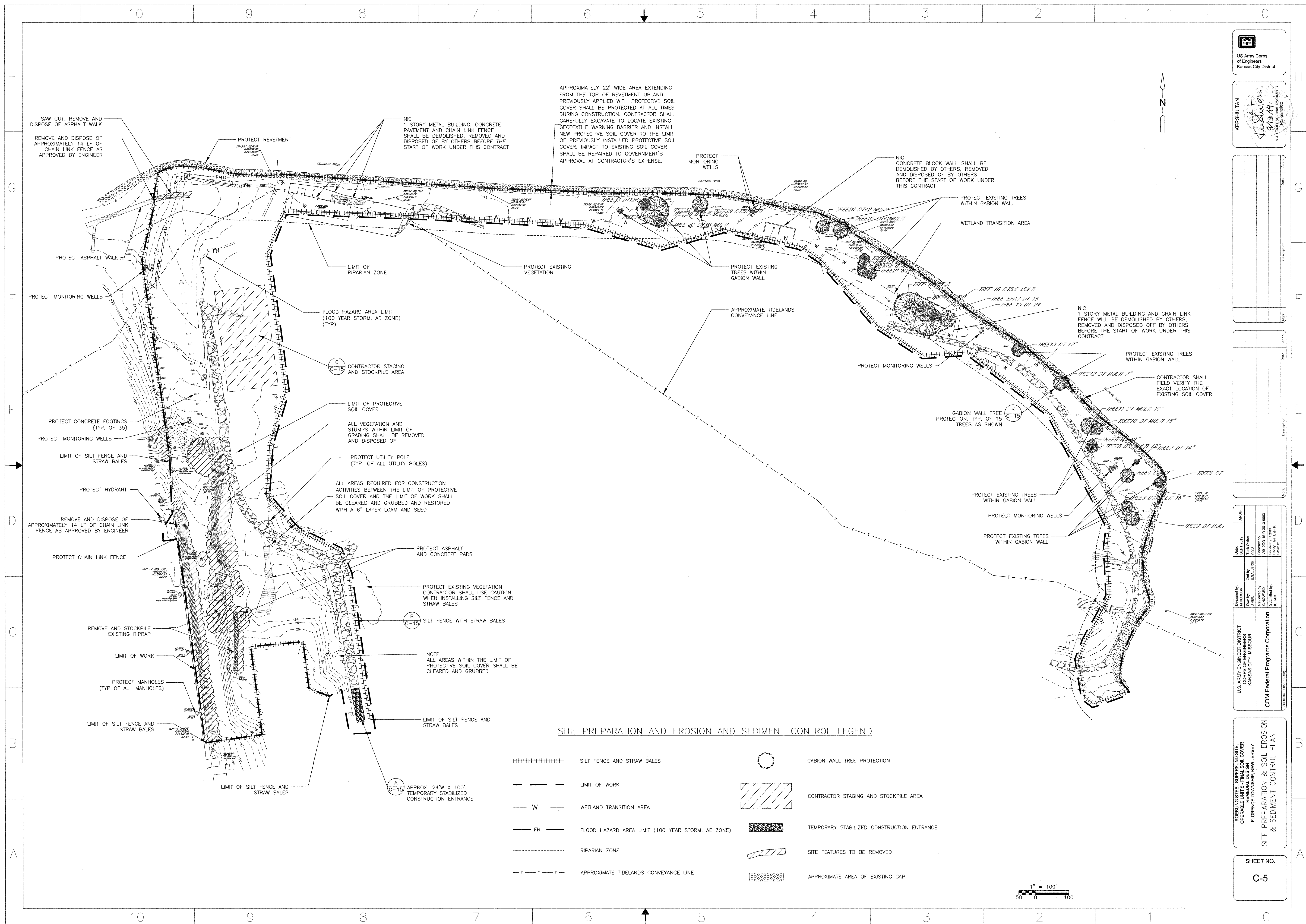
US Army Corps of Engineers
Kansas City District

KERSHU TAN
9/23/19
N.J. PROFESSIONAL ENGINEER
NO. 064882

Drawn by J. HEIL	Task Order 0003	Task Order 0003	Task Order 0003
Checked by J. HEIL	Checked by J. HEIL	Checked by J. HEIL	Checked by J. HEIL
Reviewed by J. HEIL	Reviewed by J. HEIL	Reviewed by J. HEIL	Reviewed by J. HEIL
Approved by J. HEIL	Approved by J. HEIL	Approved by J. HEIL	Approved by J. HEIL

ROEBLING STEEL SUPERFUND SITE
OPERATIONAL MONITORING
REMEDIAL DESIGN
FLORENCE TOWNSHIP, NEW JERSEY
EXISTING CONDITIONS
SURVEY PLAN IV

SHEET NO.
C-4



MATCH LINE, SEE SHEET C-7 FOR CONTINUATION

LEGEND:

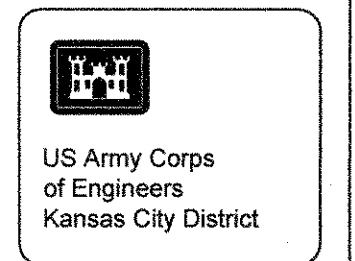
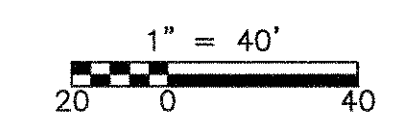
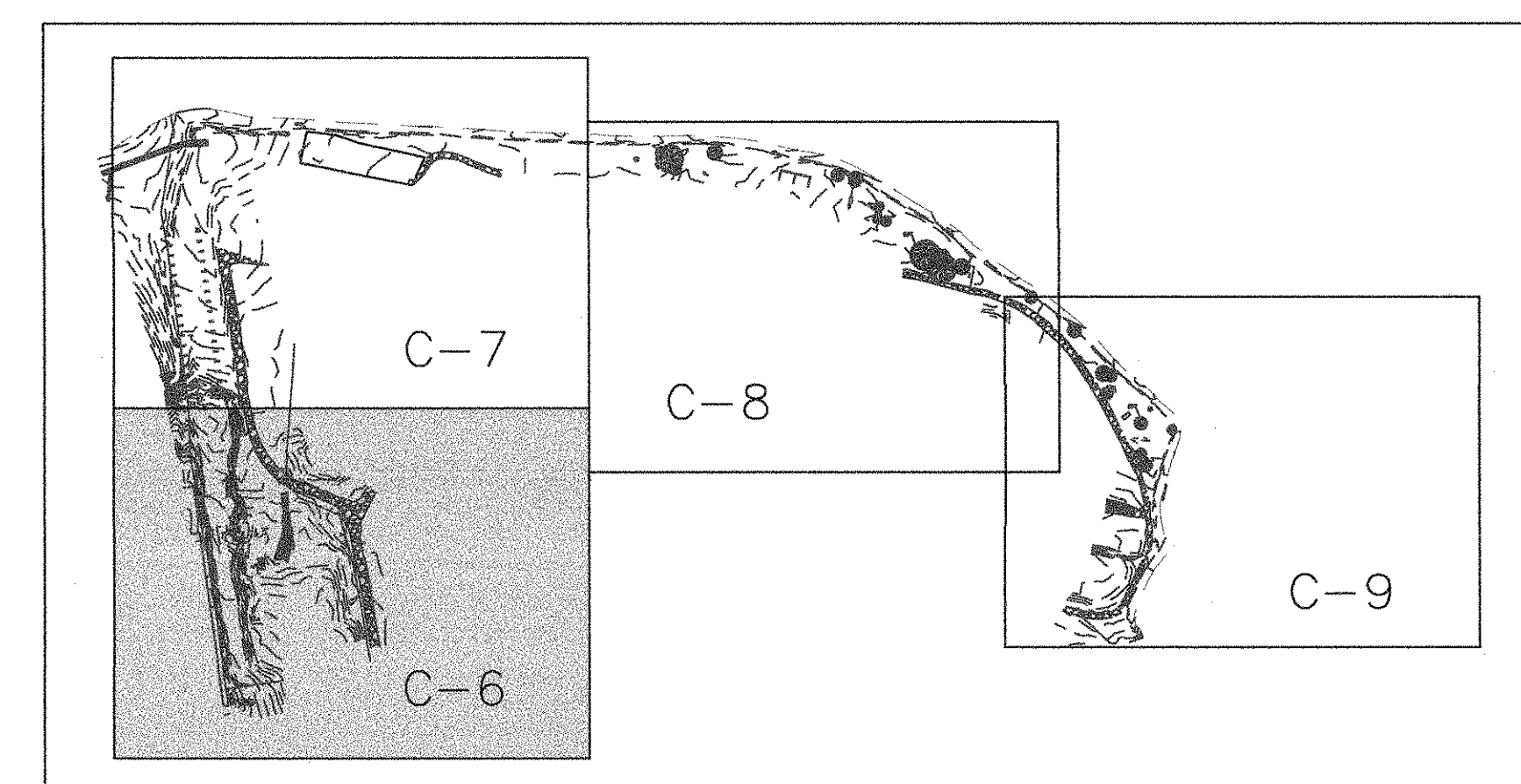
- LIMIT OF WORK
- - - LIMIT OF PROTECTIVE SOIL COVER



LIMIT OF WORK

LIMIT OF SOIL PROTECTIVE COVER (B-16)

KEYMAP (SCALE: 1" = 500')



KERSHU TAN
19/3/19
N.J. PROFESSIONAL ENGINEER

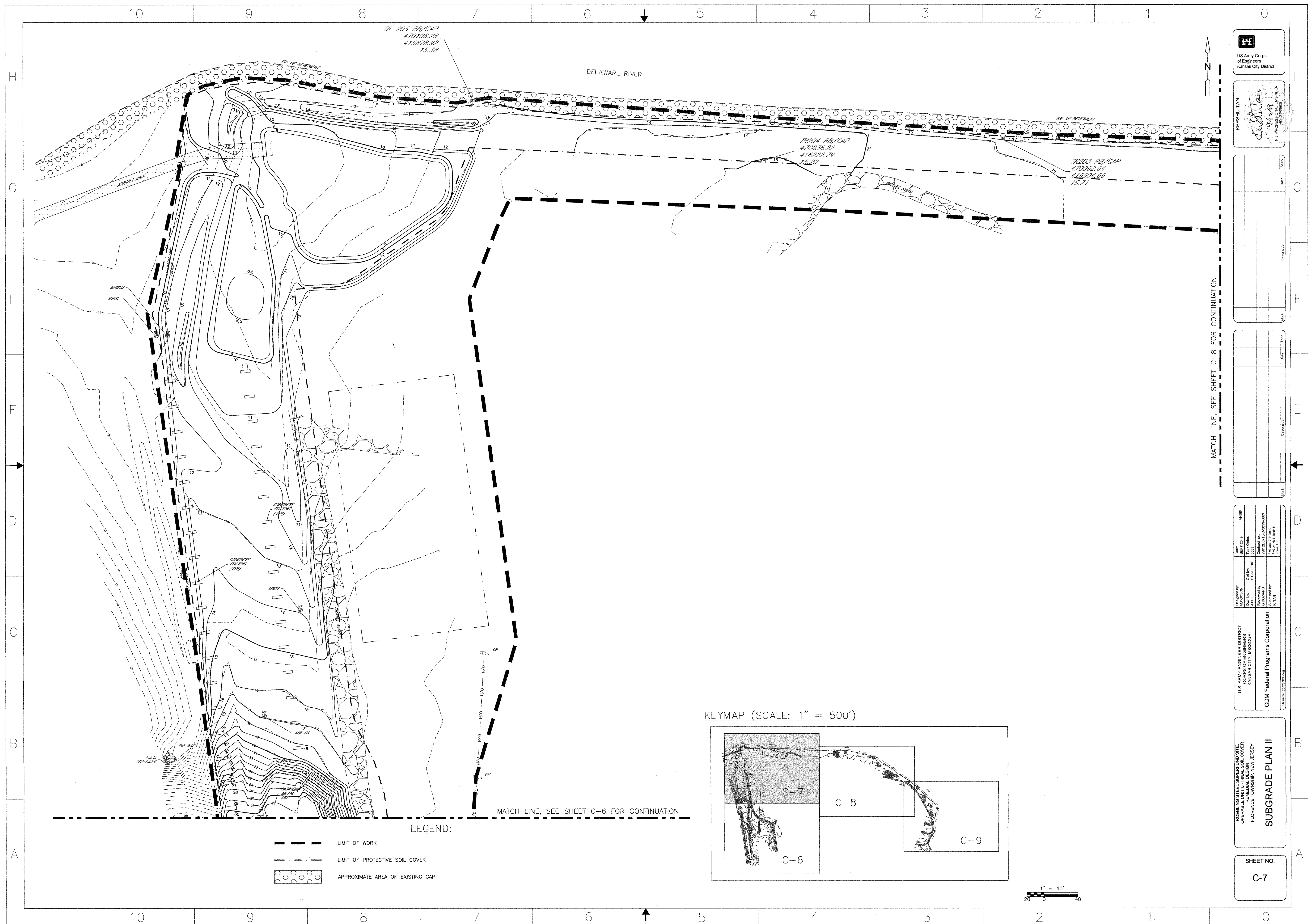
Work	Description	Date	Appr.

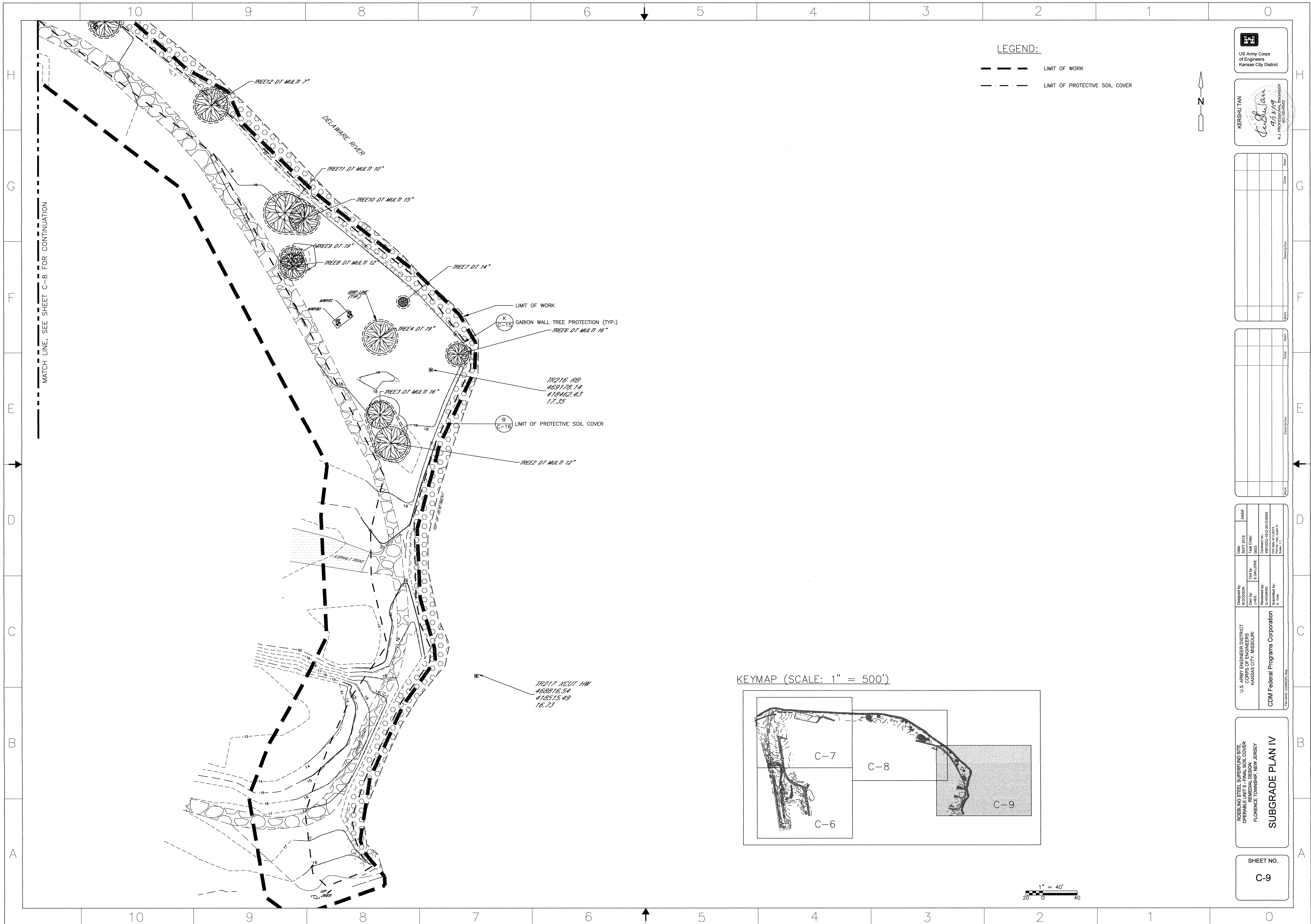
Work	Description	Date	Appr.

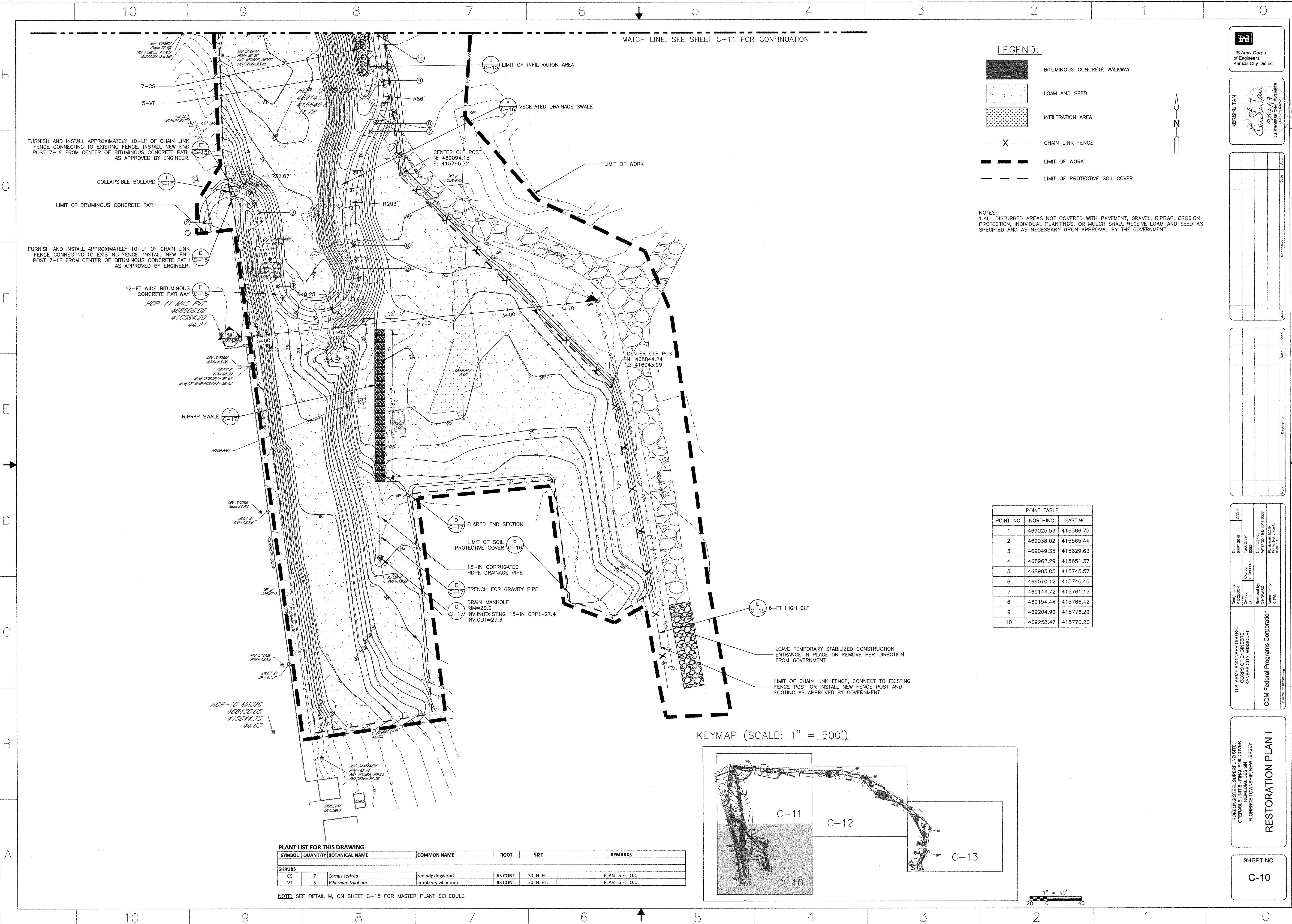
U.S. ARMY ENGINEER DISTRICT KANSAS CITY, MISSOURI	CDM Federal Programs Corporation	Designed by J. HELL	Checked by E. CALLEBE	Date SEPT 2019	Task Order 0003	ANSIF
		Drawn by G. HAWARD	Submitted by K. TAN			

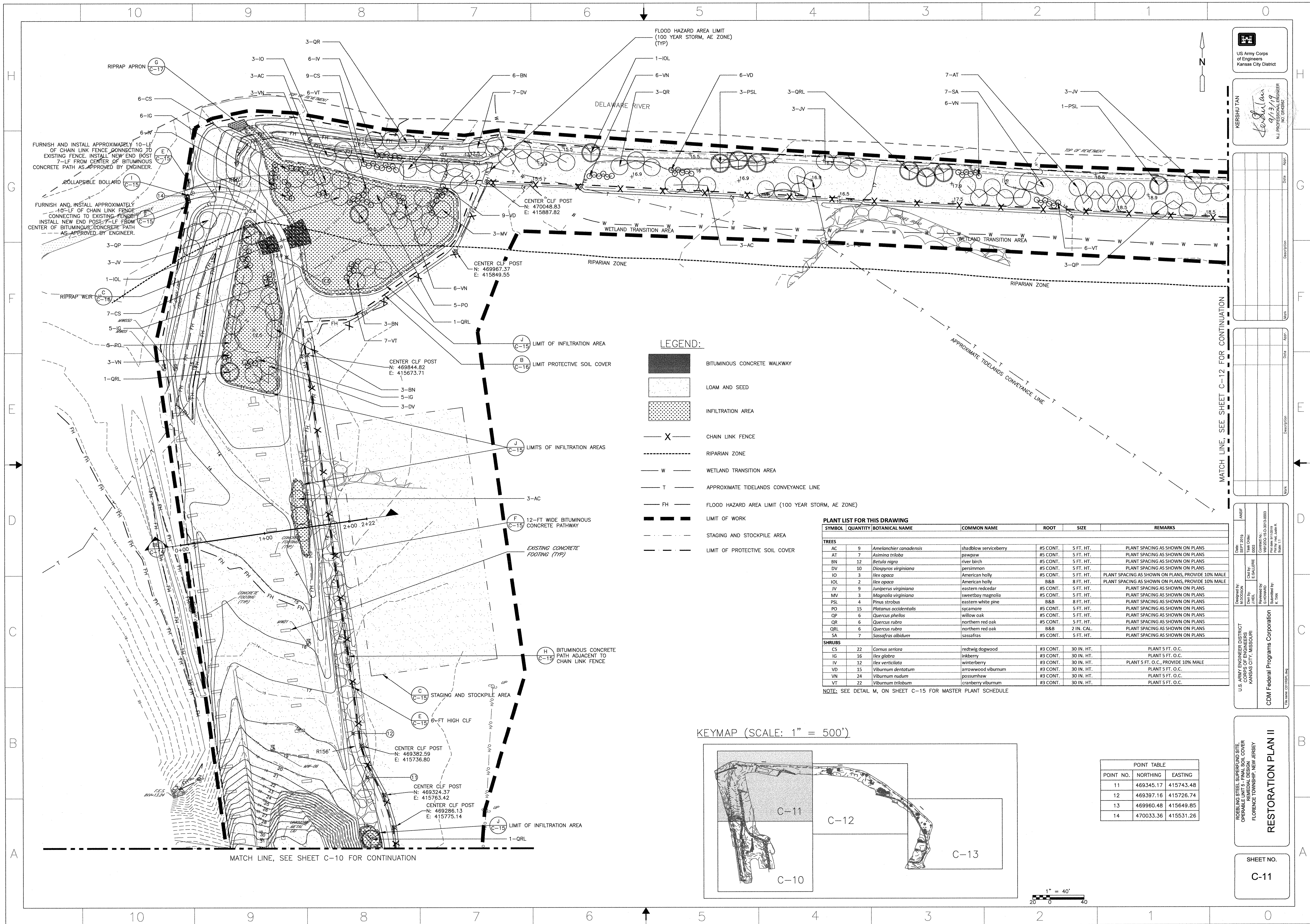
ROSEBUSH STEEL SUPERFUND SITE
OPERABLE UNIT 5 - FINAL SOIL COVER
REMEDIAL DESIGN
FLORENCE TOWNSHIP, NEW JERSEY
SUBGRADE PLAN I

SHEET NO.
C-6









LEGEND:

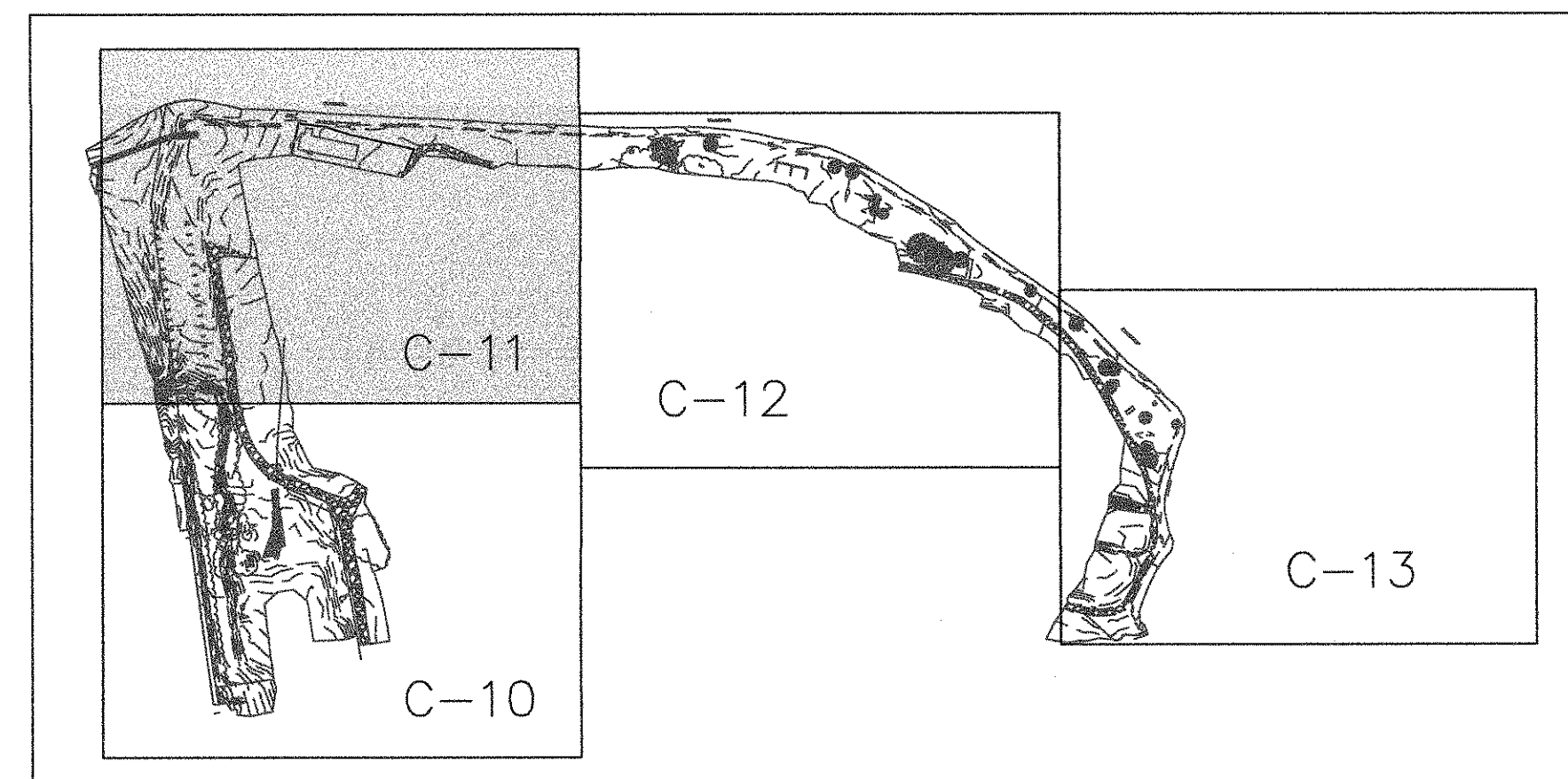
- BITUMINOUS CONCRETE WALKWAY
- LOAM AND SEED
- INFILTRATION AREA
- CHAIN LINK FENCE
- RIPARIAN ZONE
- WETLAND TRANSITION AREA
- APPROXIMATE TIDELANDS CONVEYANCE LINE
- FLOOD HAZARD AREA LIMIT (100 YEAR STORM, AE ZONE)
- LIMIT OF WORK
- STAGING AND STOCKPILE AREA
- LIMIT OF PROTECTIVE SOIL COVER

PLANT LIST FOR THIS DRAWING

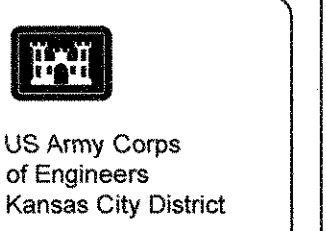
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	REMARKS
TREES						
AC	9	Amelanchier canadensis	shadblow serviceberry	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
AT	7	Asimina triloba	pawpaw	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
BN	12	Betula nigra	river birch	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
DV	10	Diospyros virginiana	persimmon	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
IO	3	Ilex opaca	American holly	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS, PROVIDE 10% MALE
IDL	2	Ilex opaca	American holly	#5 CONT.	8 FT. HT.	PLANT SPACING AS SHOWN ON PLANS, PROVIDE 10% MALE
IV	9	Juniperus virginiana	eastern redcedar	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
MV	3	Magnolia virginiana	sweetbay magnolia	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
PSL	4	Pinus strobus	eastern white pine	B&B	8 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
PO	15	Platanus occidentalis	sycamore	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
QP	6	Quercus phellos	willow oak	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
QR	6	Quercus rubra	northern red oak	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
QRL	6	Quercus rubra	northern red oak	B&B	2 IN. CAL.	PLANT SPACING AS SHOWN ON PLANS
SA	7	Sassafras albidum	sassafras	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS
SHRUBS						
CS	22	Cornus sericea	redtwig dogwood	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.
IG	16	Ilex glabra	inkberry	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.
IV	12	Ilex verticillata	winterberry	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C., PROVIDE 10% MALE
VD	15	Viburnum dentatum	arrowwood viburnum	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.
VN	24	Viburnum nudum	possumhaw	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.
VT	22	Viburnum trilobum	cranberry viburnum	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.

NOTE: SEE DETAIL M, ON SHEET C-15 FOR MASTER PLANT SCHEDULE

KEYMAP (SCALE: 1" = 500')



POINT TABLE		
POINT NO.	NORTHING	EASTING
11	469345.17	415743.48
12	469397.16	415726.74
13	469960.48	415649.85
14	470033.36	415531.26



KERSHU TAN
9/13/19
N.J. PROFESSIONAL ENGINEER
NO. 004982

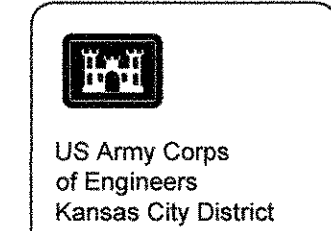
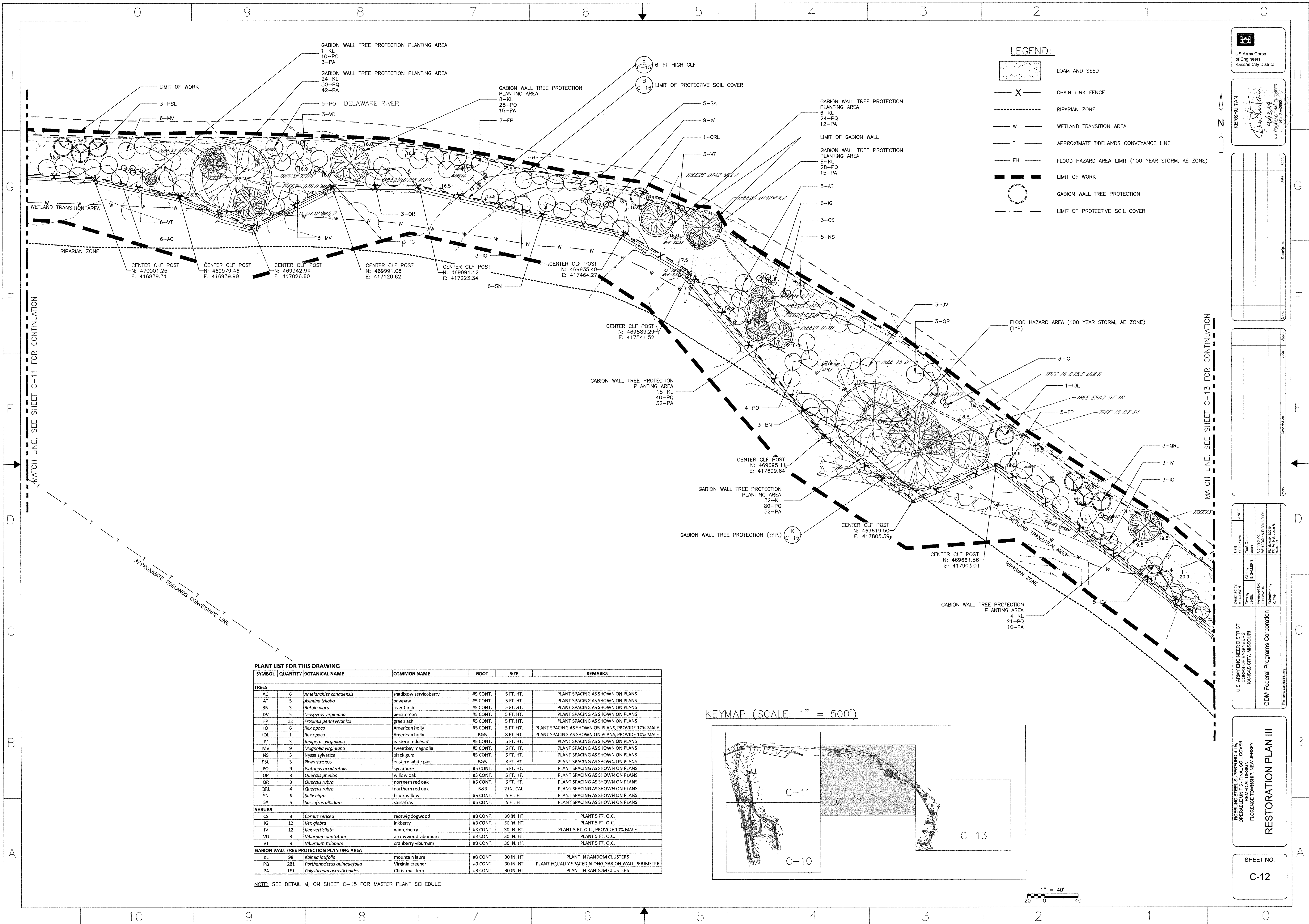
NO.	DESCRIPTION	DATE	APPROVED

NO.	DESCRIPTION	DATE	APPROVED

Designed by J. HELL	Task Order 0003	Contract No. CDM 0013.0003	Permit No. 1001010
Drawn by J. HELL	Check by E. GALLERIE	Reviewed by K. TAN	Submitted by K. TAN
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI			
CDM Federal Programs Corporation			

ROBING STEEL SUPERFUND SITE
OPERATIONAL RESTORATION
REMEDIAL DESIGN
FLORENCE TOWNSHIP, NEW JERSEY
RESTORATION PLAN II

SHEET NO.
C-11



KERSHU YAN
9/13/19
N.J. PROFESSIONAL ENGINEER
NO. 000000000

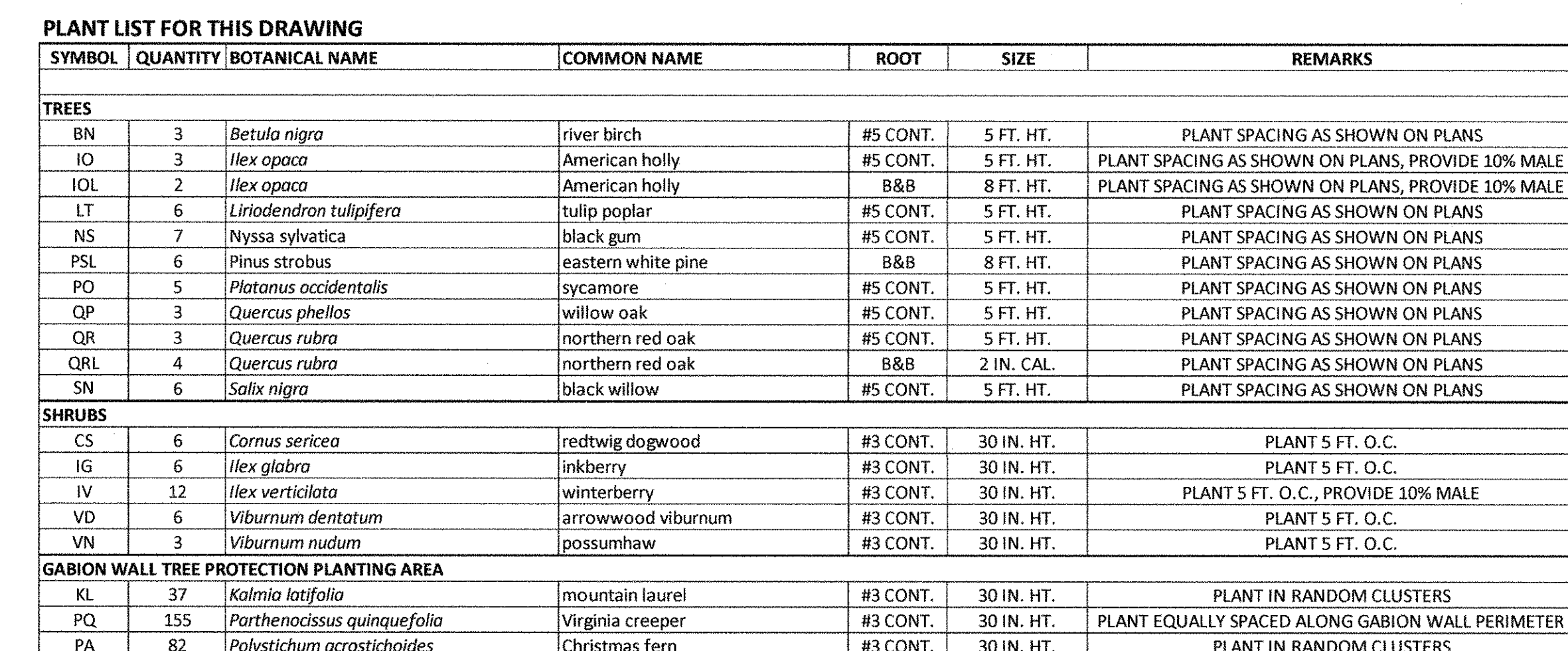
Rev	Date	Description

Rev	Date	Description

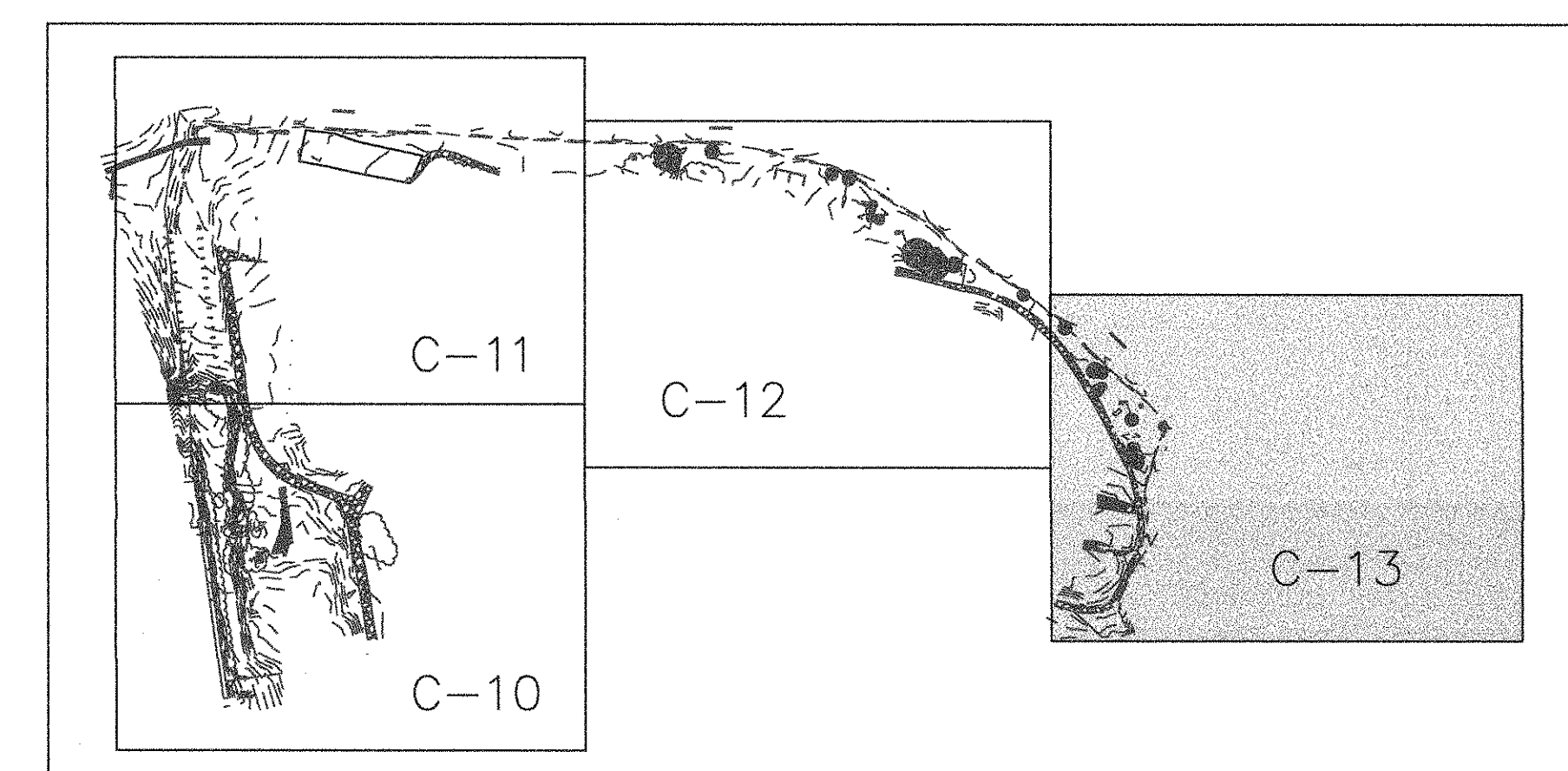
DESIGNED BY J. HILL	CHECKED BY E. GALLERIE	DATE SEPT 2019	ANSI 10003
DRAWN BY J. HILL	SCALE AS SHOWN	PROJECT NO. 19-000000000	PROJECT NAME RESTORATION PLAN III
APPROVED BY K. TAN		SUBMITTED BY K. TAN	

RESTORATION PLAN III
FLORENCE TOWNSHIP, NEW JERSEY


SHEET NO.
C-12



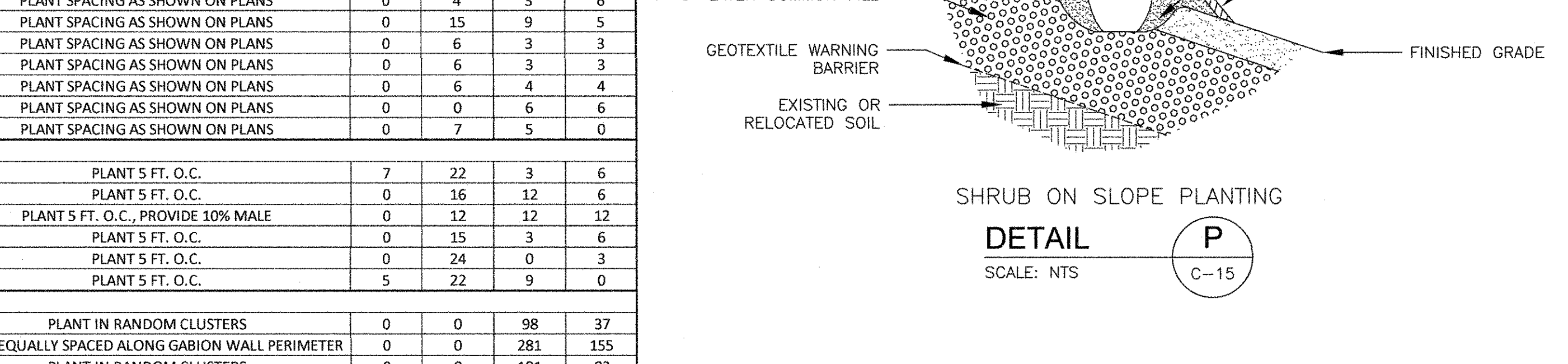
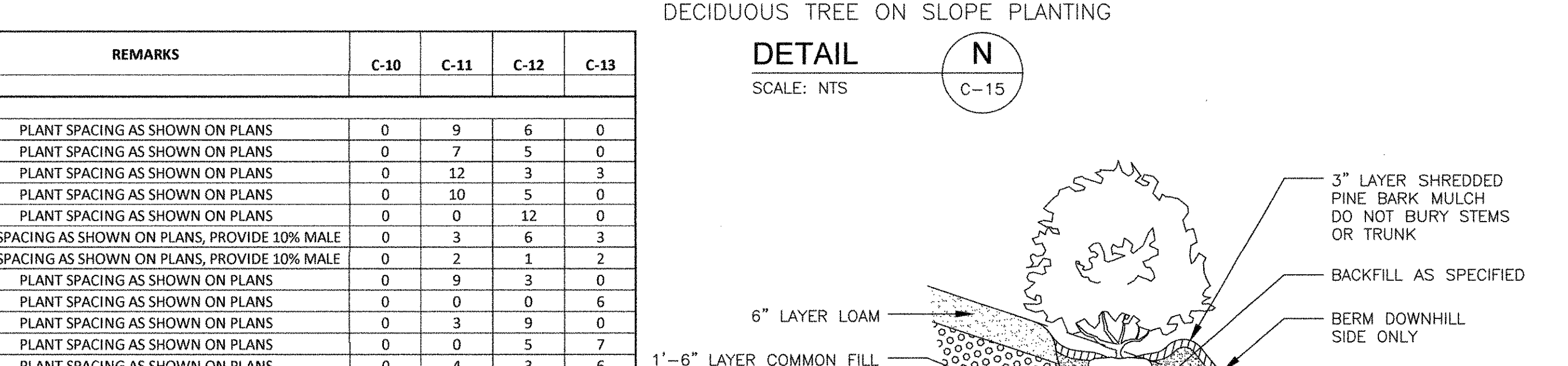
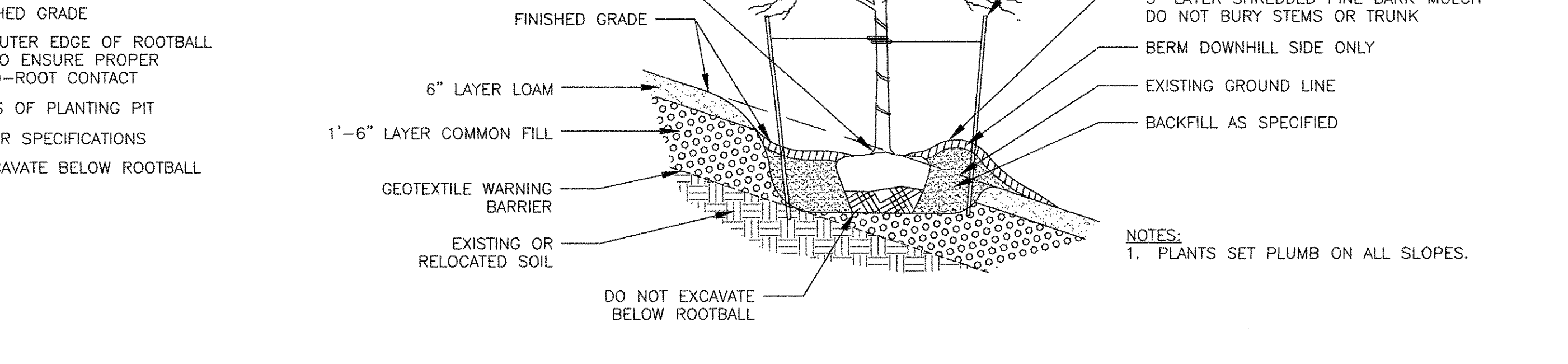
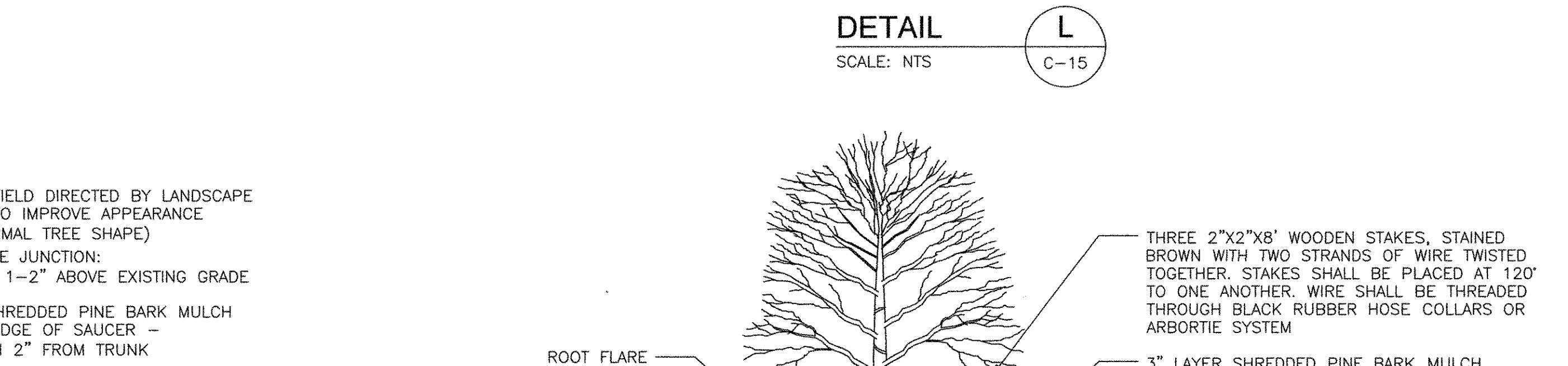
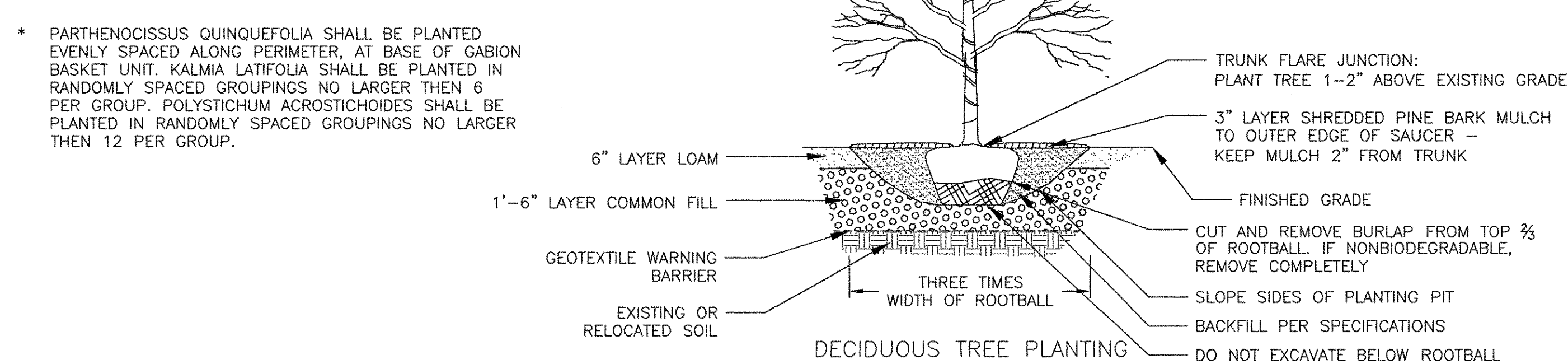
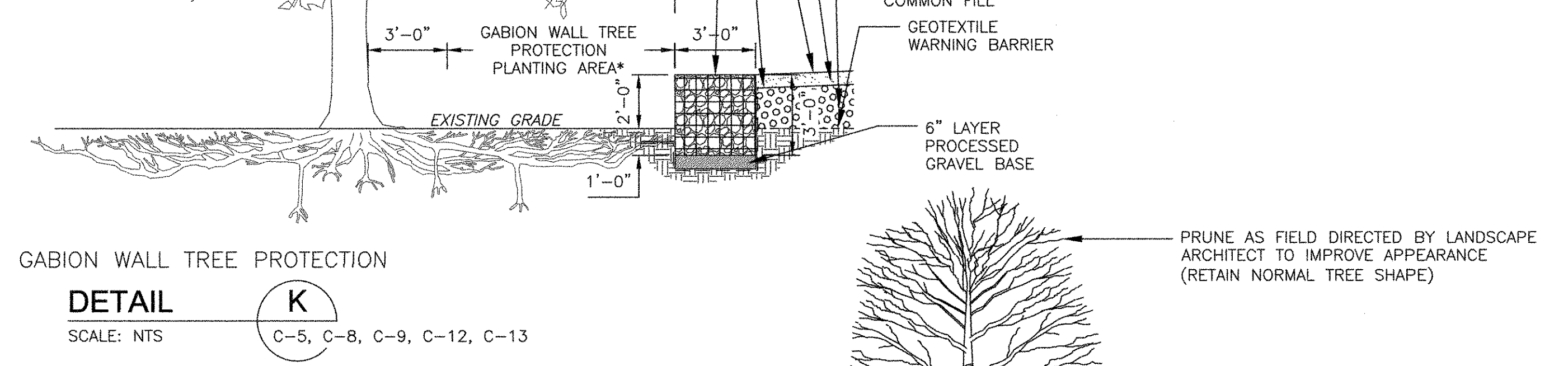
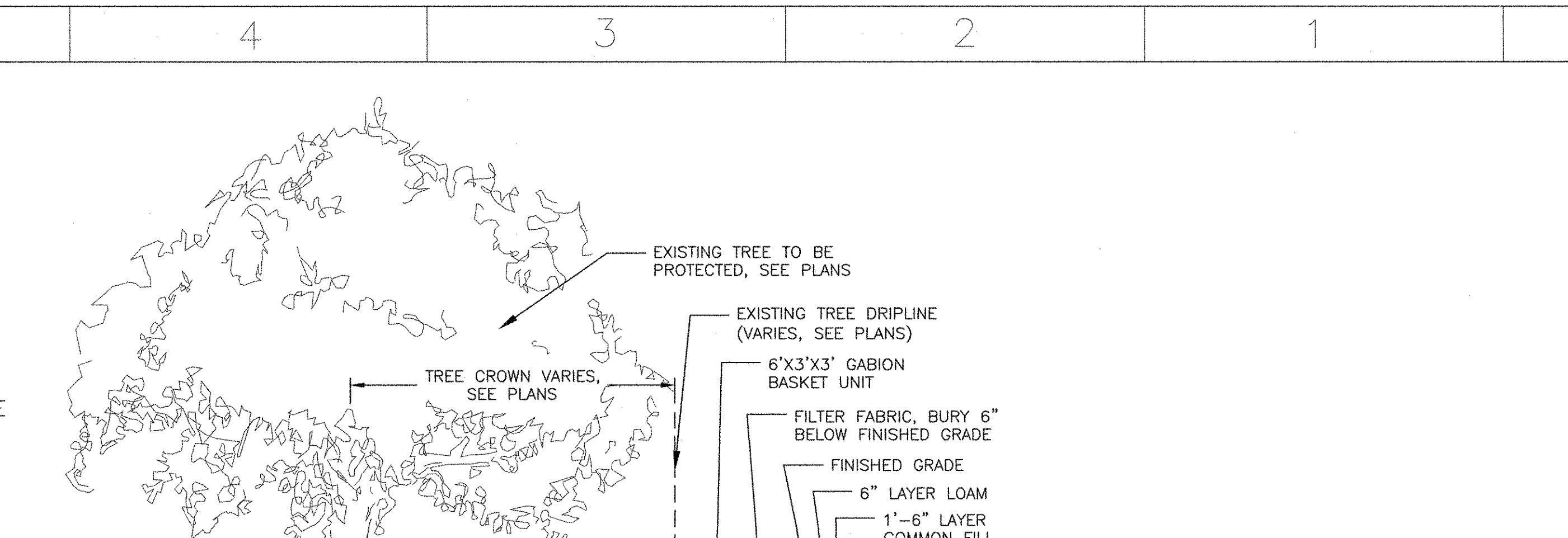
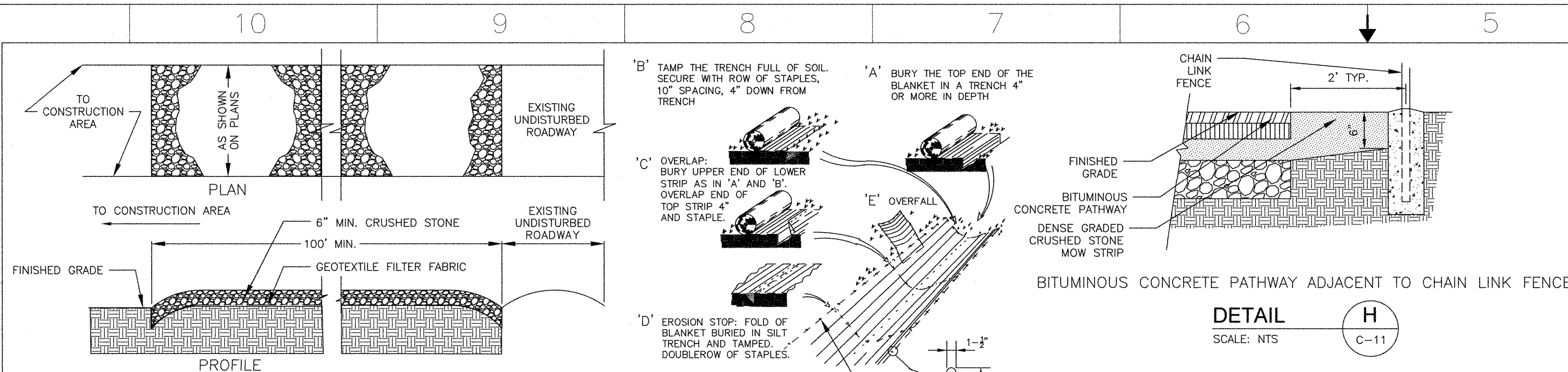
NOTE: SEE DETAIL M, ON SHEET C-15 FOR MASTER PLANT SCHEDULE.



1" = 40'

A horizontal graphic scale bar. It is divided into two main sections. The left section is marked with '0' at the left end and '20' at the right end. This section contains a series of alternating black and white squares. The right section is marked with '40' at the right end and is a solid black bar. Above the bar, the text '1" = 40\'' is written.

FINAL DRAWINGS



MASTER PLANT SCHEDULE									
SYMBOL	TOTAL QUANTITY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	REMARKS	C-10	C-11	C-12
DECIDUOUS TREES									
AC	15	<i>Amelanchier canadensis</i>	shadblow serviceberry	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	9	6
AT	12	<i>Asimina triloba</i>	pawpaw	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	7	5
BN	18	<i>Betula nigra</i>	river birch	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	12	3
DV	15	<i>Diospyros virginiana</i>	persimmon	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	10	5
GP	12	<i>Fraxinus pennsylvanica</i>	green ash	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	0	12
IO	12	<i>Ilex opaca</i>	American holly	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS, PROVIDE 10% MALE	0	3	6
IOL	5	<i>Ilex opaca</i>	American holly	#8&	8 FT. HT.	PLANT SPACING AS SHOWN ON PLANS, PROVIDE 10% MALE	0	2	1
JV	12	<i>Juniperus virginiana</i>	eastern redcedar	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	9	3
LT	6	<i>Liriodendron tulipifera</i>	tulip poplar	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	0	0
MV	12	<i>Magnolia virginiana</i>	sweetbay magnolia	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	3	9
NS	12	<i>Nyssa sylvatica</i>	black gum	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	0	5
PSL	13	<i>Pinus strobus</i>	eastern white pine	#8&	8 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	4	3
PO	29	<i>Platanus occidentalis</i>	sycamore	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	15	9
QP	12	<i>Quercus phellos</i>	willow oak	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	6	3
QR	12	<i>Quercus rubra</i>	northern red oak	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	6	3
QRL	14	<i>Quercus rubra</i>	northern red oak	#8&	2 IN. CAL.	PLANT SPACING AS SHOWN ON PLANS	0	6	4
SN	12	<i>Salix nigra</i>	black willow	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	0	6
SA	12	<i>Sassafras albidum</i>	sassafras	#5 CONT.	5 FT. HT.	PLANT SPACING AS SHOWN ON PLANS	0	7	5
SHRUBS									
CS	31	<i>Cornus sericea</i>	redtwig dogwood	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.	7	22	3
IG	34	<i>Ilex glabra</i>	inkberry	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.	0	16	12
IV	36	<i>Ilex verticillata</i>	winterberry	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.	0	12	12
VD	24	<i>Viburnum dentatum</i>	arrowwood viburnum	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.	0	15	3
VN	27	<i>Viburnum nudum</i>	possumhaw	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.	0	24	0
VT	31	<i>Viburnum trilobum</i>	cranberry viburnum	#3 CONT.	30 IN. HT.	PLANT 5 FT. O.C.	5	22	9
GABION WALL TREE PROTECTION PLANTING AREA									
KL	135	<i>Kalmia latifolia</i>	mountain laurel	#3 CONT.	30 IN. HT.	PLANT IN RANDOM CLUSTERS	0	0	98
PQ	436	<i>Parthenocissus quinquefolia</i>	Virginia creeper	#3 CONT.	30 IN. HT.	PLANT EQUALLY SPACED ALONG GABION WALL PERIMETER	0	0	281
PA	263	<i>Polystichum acrostichoides</i>	Christmas fern	#3 CONT.	30 IN. HT.	PLANT IN RANDOM CLUSTERS	0	0	181

MASTER PLANT SCHEDULE

DETAIL M
SCALE: NTS
C-10, C-11, C-12, C-13

US Army Corps of Engineers
Kansas City District

KERSHUN TAN
Professional Engineer
No. 91319
State of Missouri

Drawn by: J. H. H. (J. H. H.)

Check by: J. H. H. (J. H. H.)

Designed by: J. H. H. (J. H. H.)

Reviewed by: J. H. H. (J. H. H.)

Approved by: J. H. H. (J. H. H.)

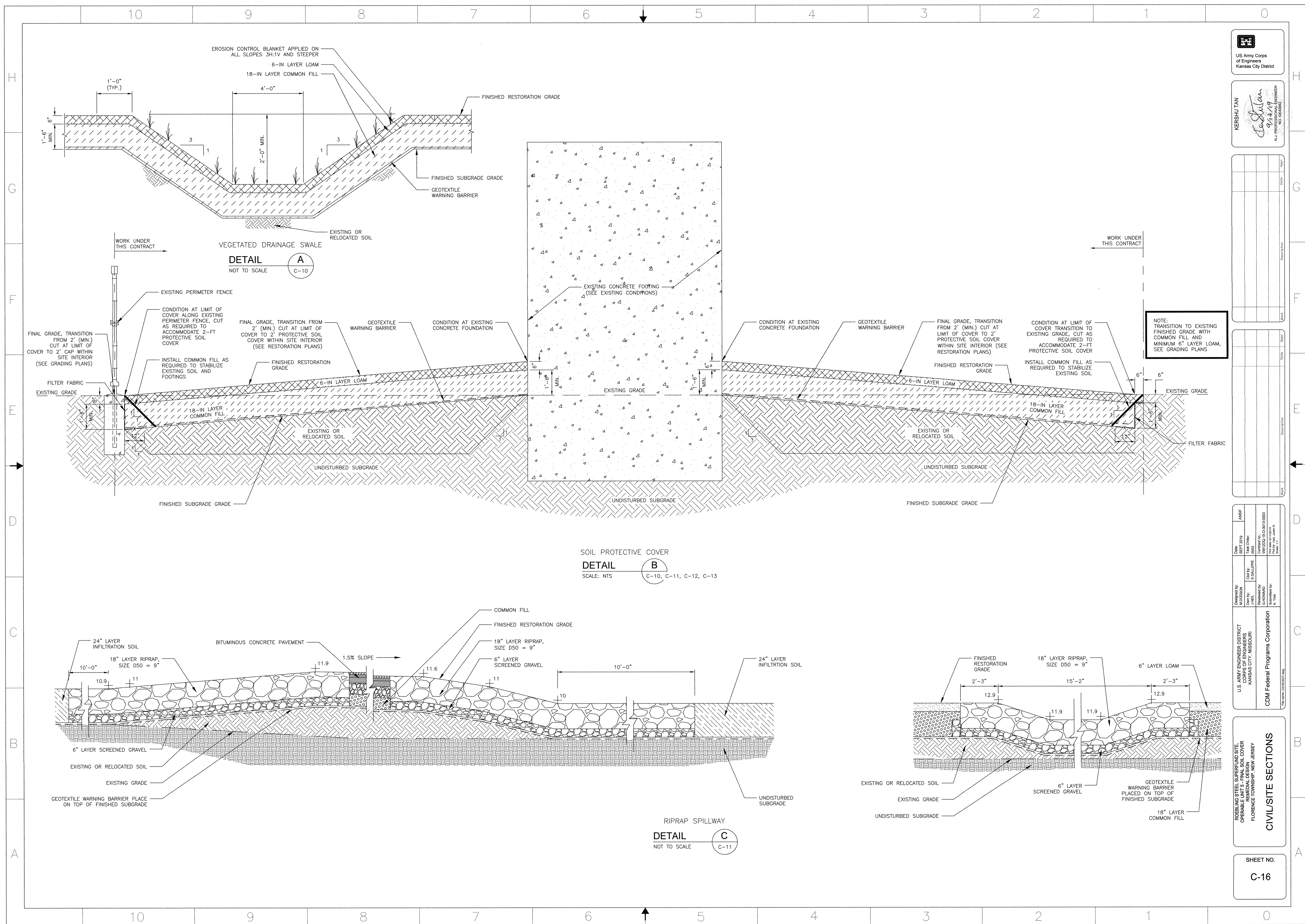
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

CDM Federal Programs Corporation

ROBERT STEEL SUPERFUND SITE
OPERATIONAL MONITORING
REMEDIAL DESIGN
FLORENCE TOWNSHIP, NEW JERSEY

CIVIL/SITE DETAILS I

SHEET NO.
C-15



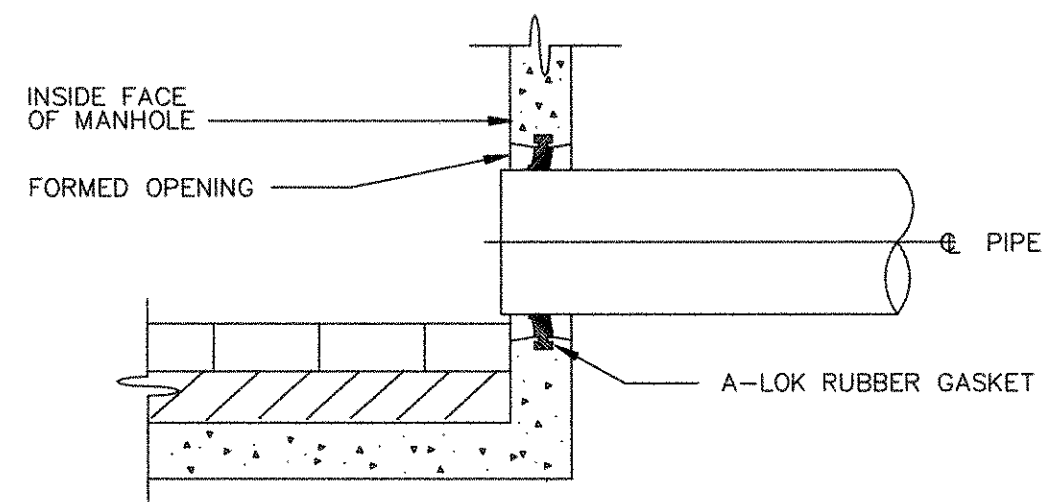


FIGURE NO. 1

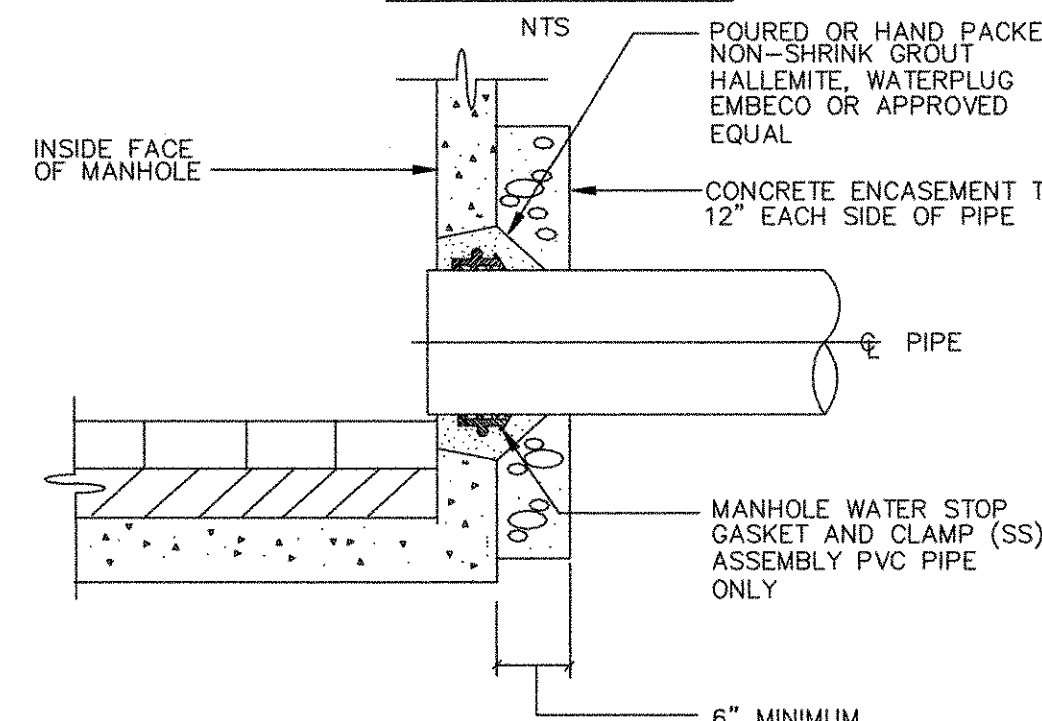


FIGURE NO. 2

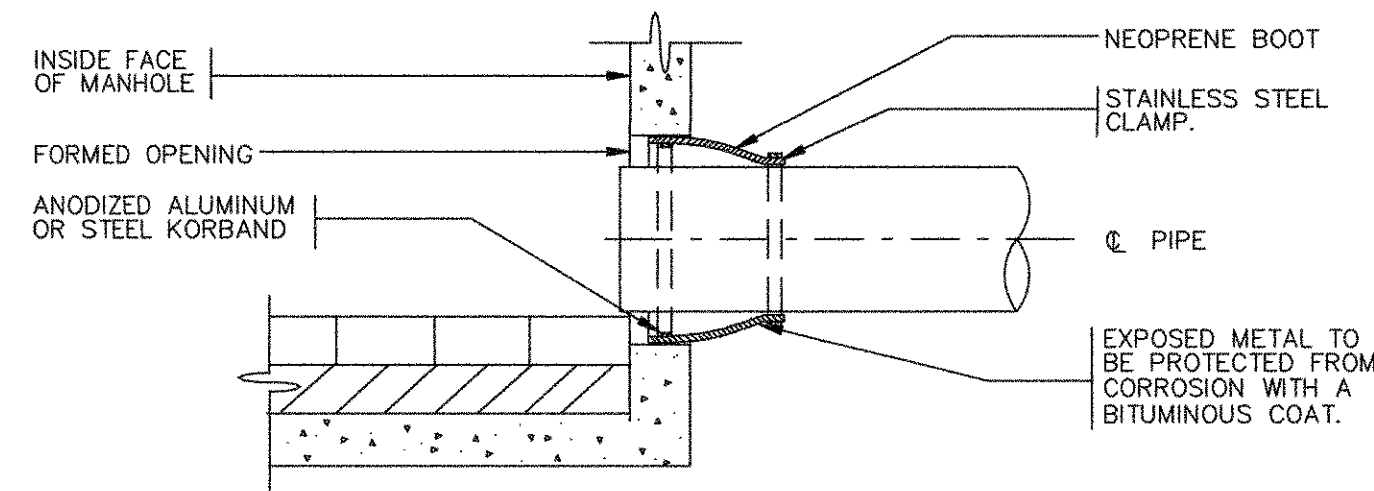


FIGURE NO. 3

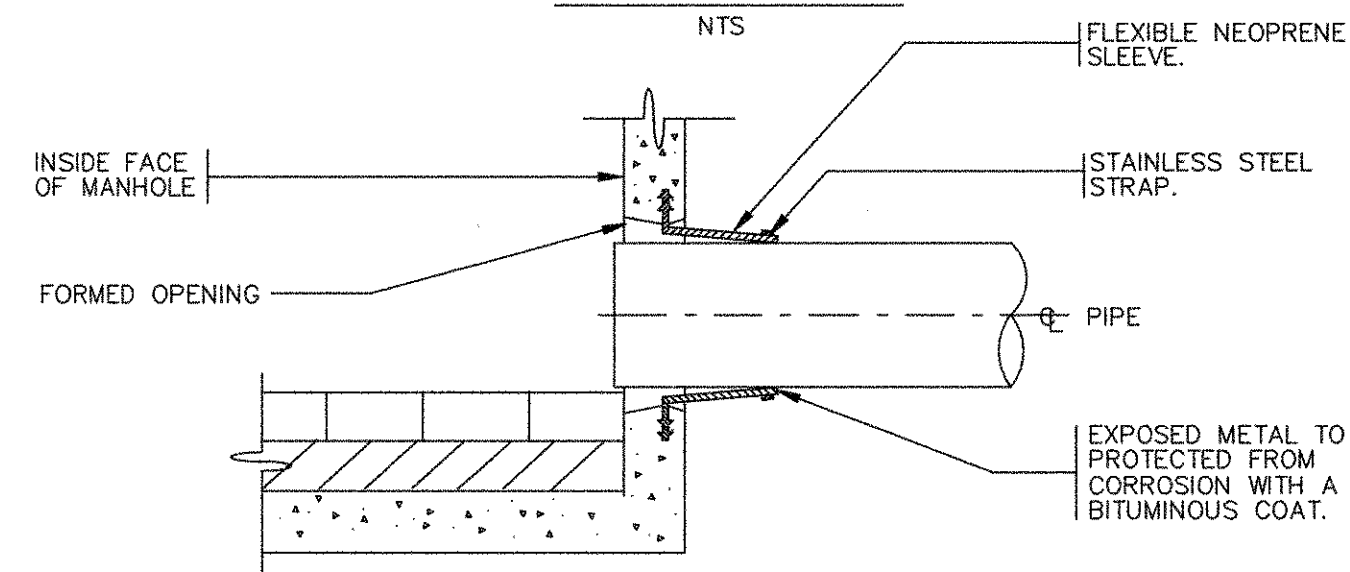
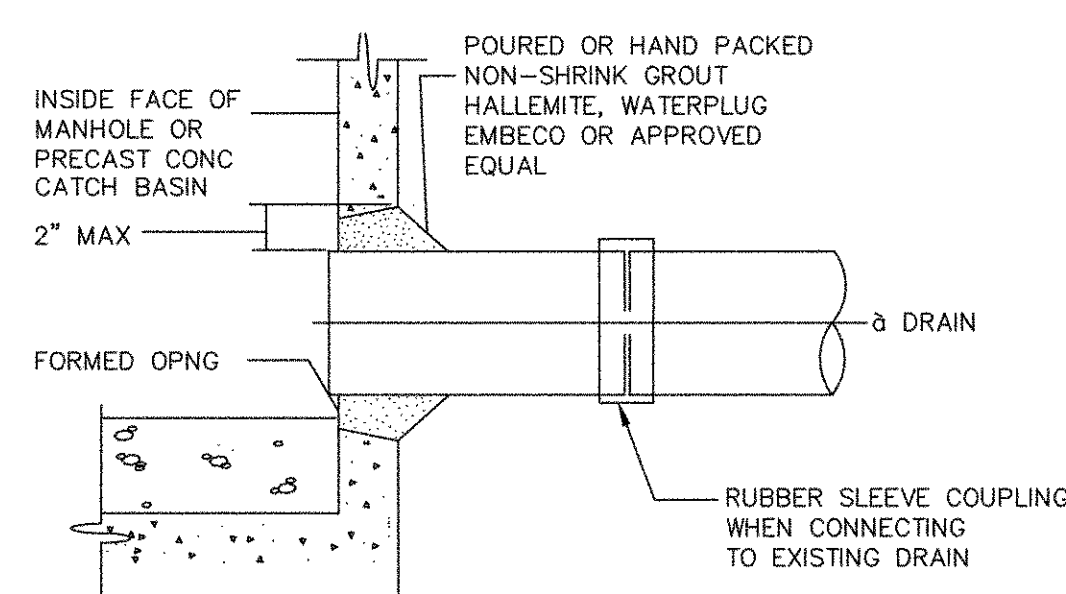


FIGURE NO. 4

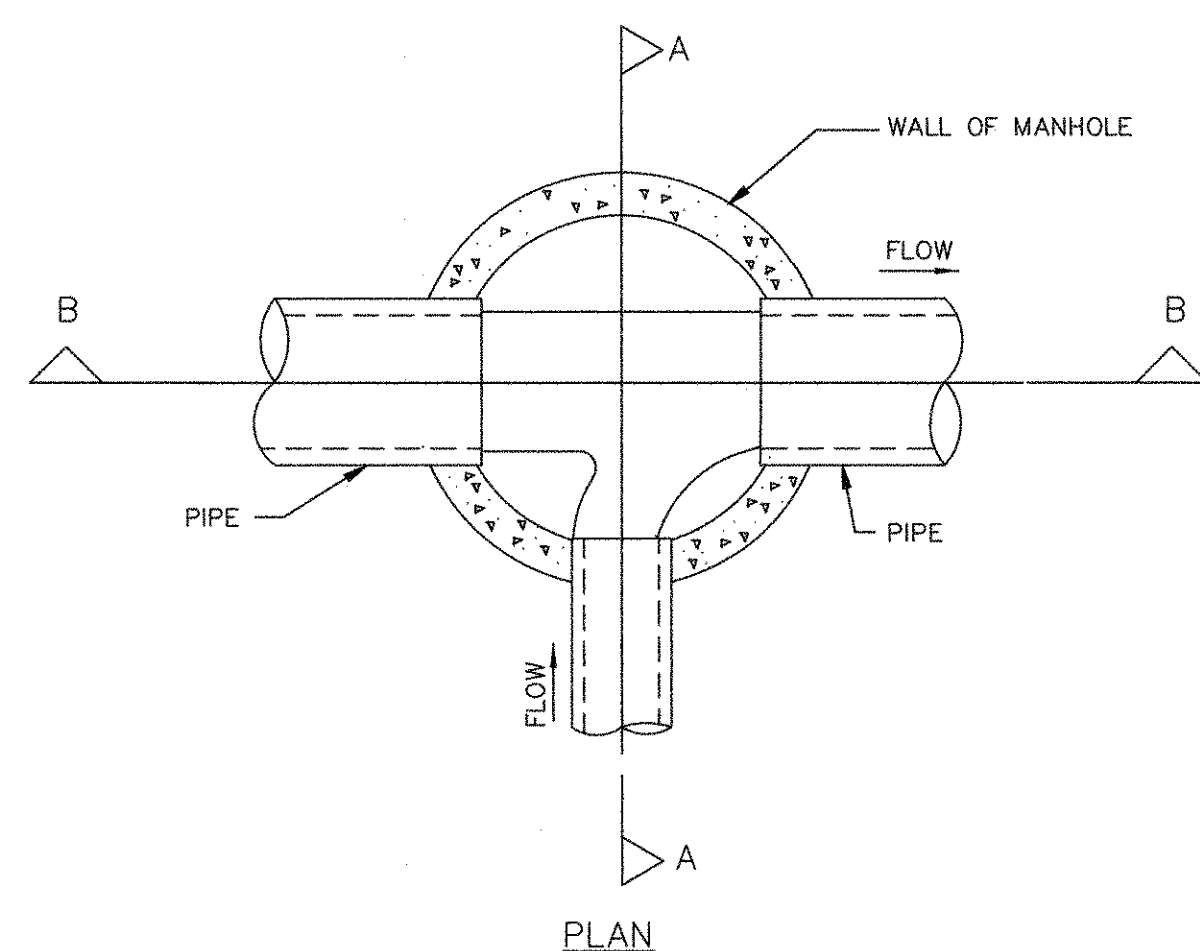
OTHER MANHOLE PIPE CONNECTION DETAILS

DETAIL A C-17

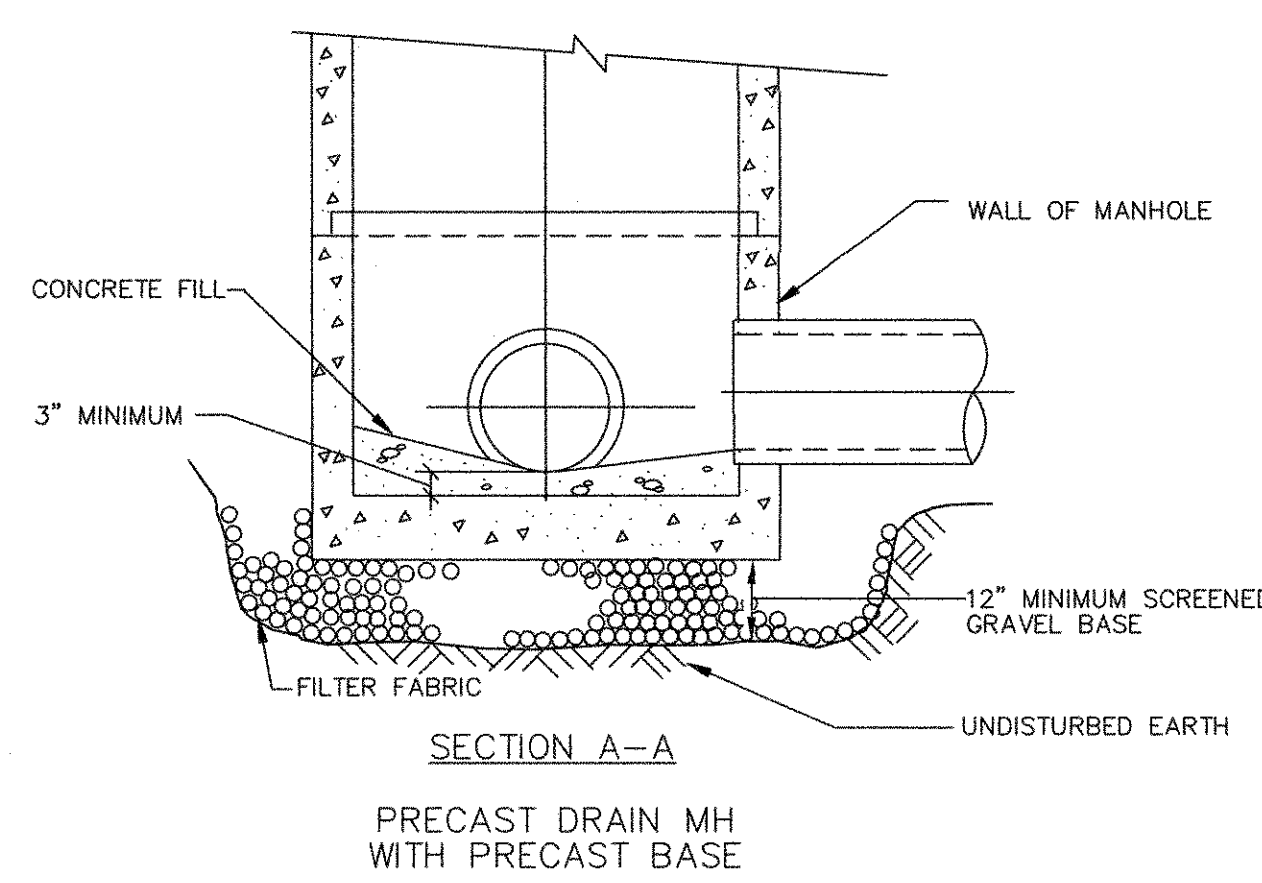


DRAIN MANHOLE PIPE CONNECTION DETAILS

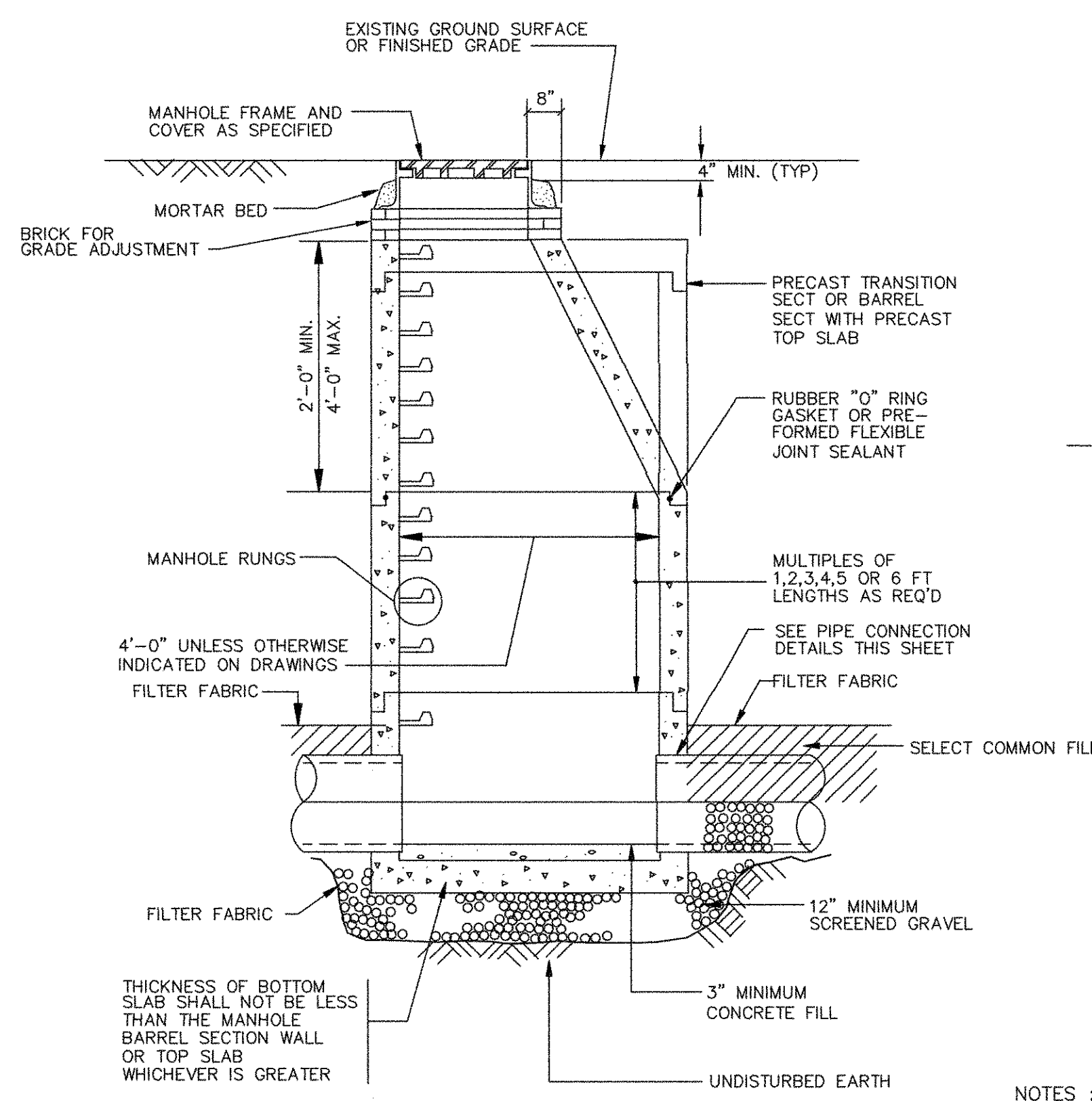
DETAIL B C-17



PLAN



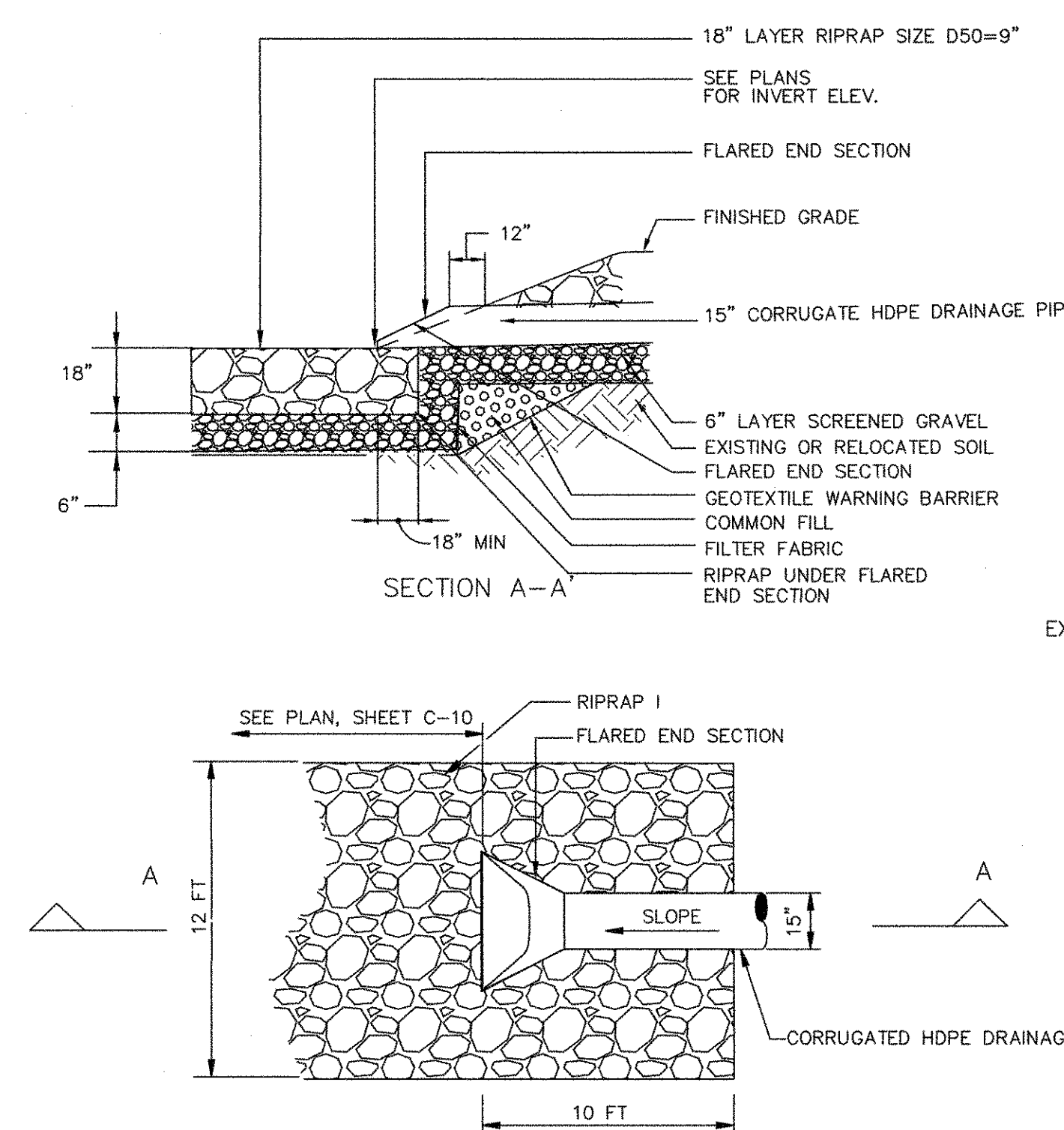
SECTION A-A
PRECAST DRAIN MH WITH PRECAST BASE



SECTION B-B

DRAIN MANHOLE DETAIL

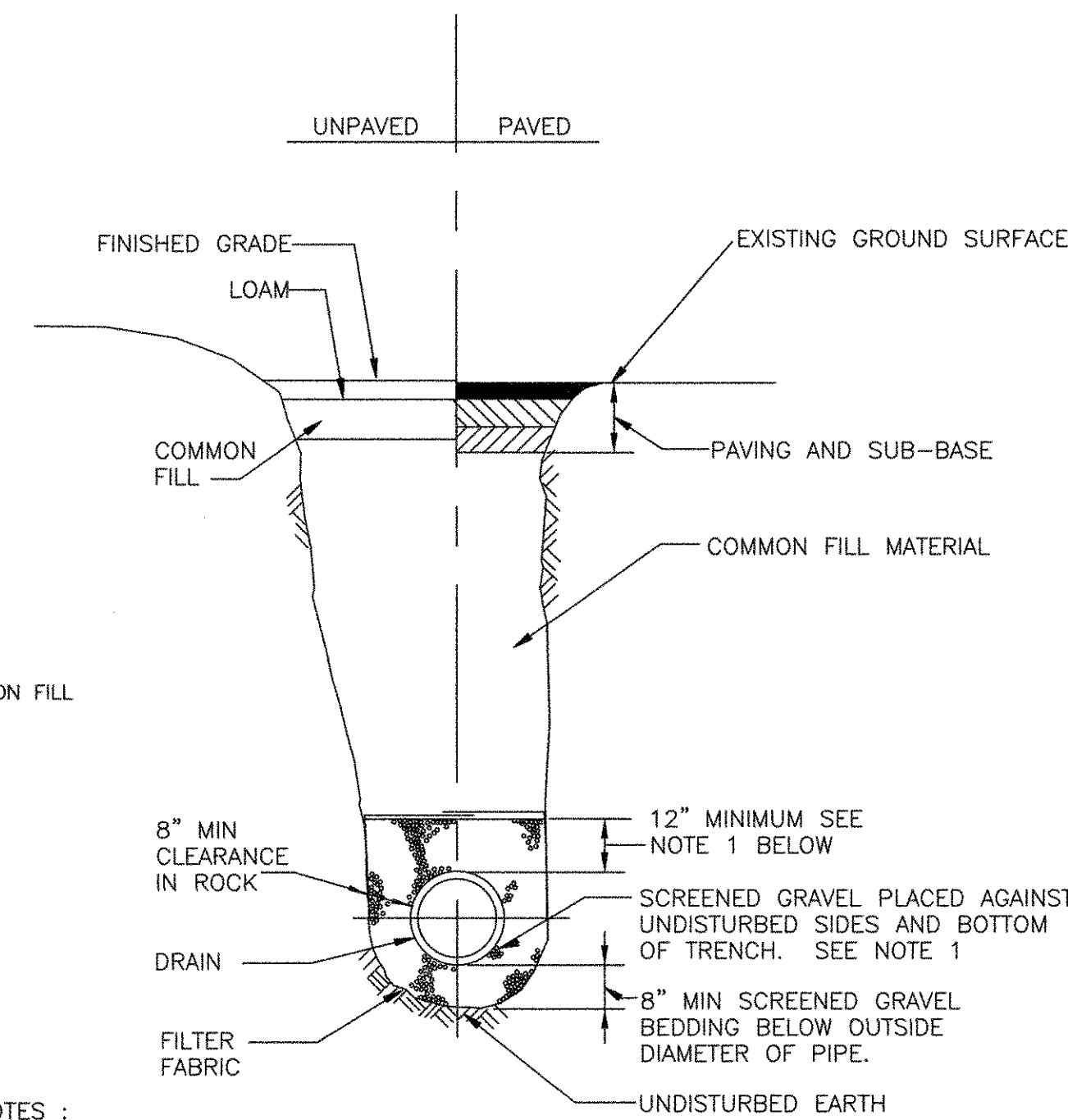
DETAIL C C-17



PLAN

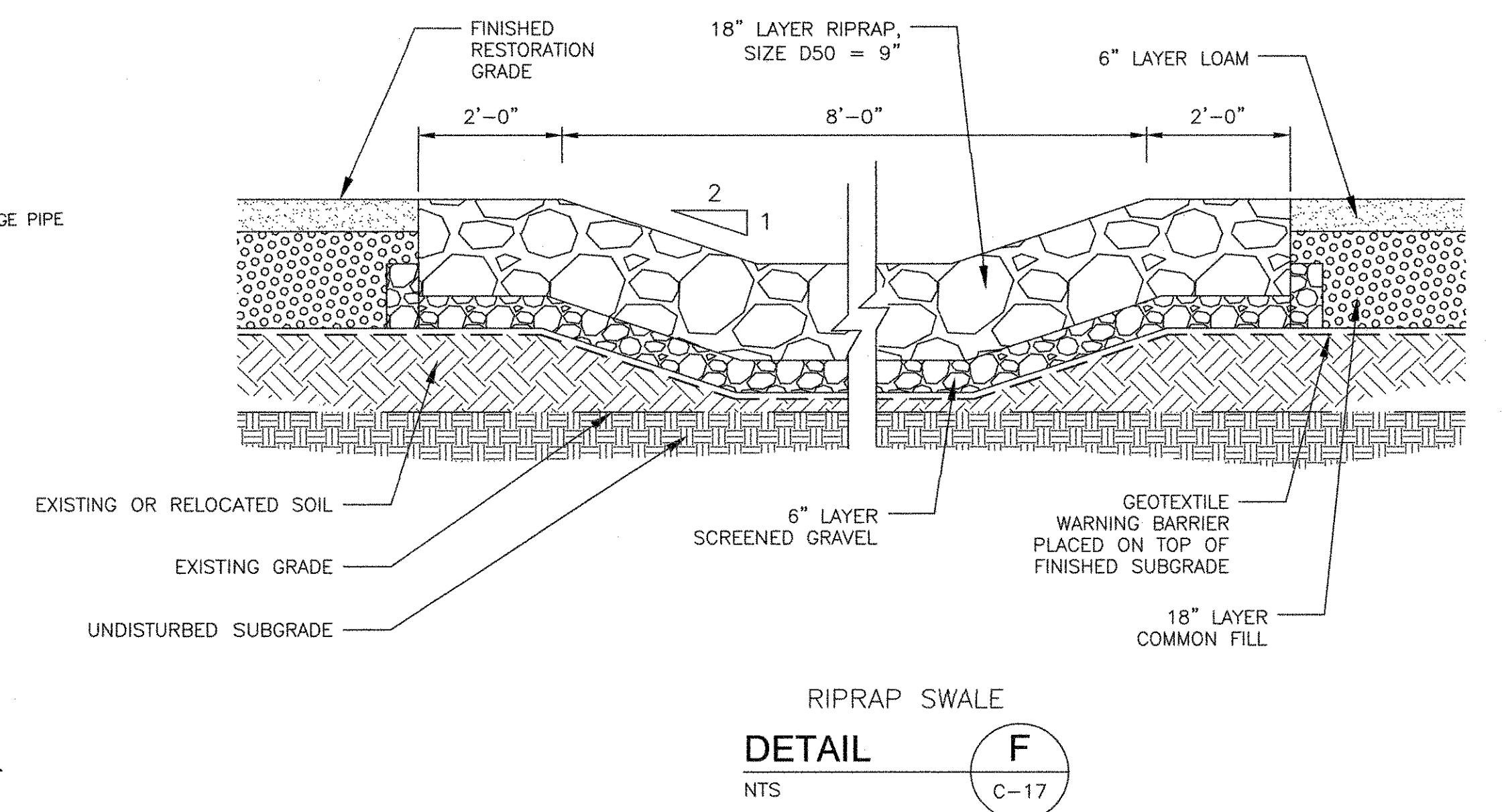
FLARED END SECTION (FES)

DETAIL D C-17

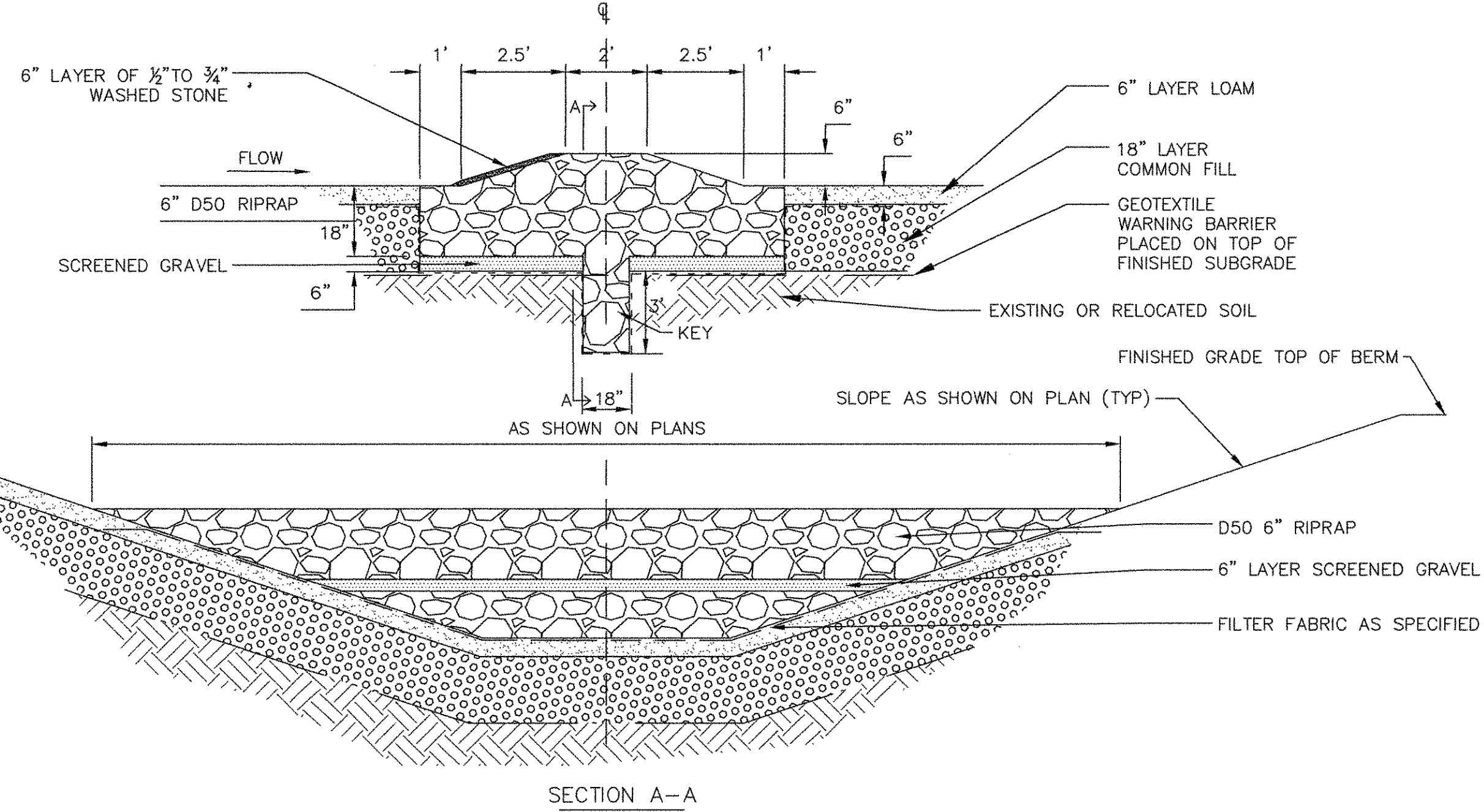


TRENCH DETAIL FOR ALL GRAVITY PIPE

DETAIL E C-17



RIPRAP SWALE
DETAIL F
NTS C-17



SECTION A-A

RIPRAP APRON

DETAIL G
SCALE: NTS C-17

NOTES:
1. FOR PIPES OTHER THAN PVC AND HDPE, SELECT COMMON FILL MAY BE USED FROM MID-DIAMETER OF PIPE TO 12" ABOVE TOP OF PIPE.